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THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' ...oundland Agricultural Board.

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Volume 21. ..., 1915. Number 1.

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The products of the field and garden were judged by S. J. Moore and B. V. Reid. B. Goodspeed, W. Illingworth and J. W. Smith & Sons, showed the largest and best collections of field roots. The best collections of garden vegetables were shown by J. Bebbington & Son, J. W. Smith & Son, and B. Goodspeed. There was keen competition in every section of the grain and vegetable classes. The fruit-growers made a big showing of the products of their orchards. The fruit was clean, well grown and attractive. A. G. Turney placed the awards. The best three boxes, one variety, were shown by W. B. Gilman, Mrs. Darcus, I. W. Stephenson and St. John Vallley Nurseries.

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The best collection, 10 varieties, apples, were shown by A. Sangster, Falmouth, N.S., W. B. Gilman, W. P & F. L. Fox and Mrs. Darcus.

The most effective displays made by farmers to advertise their apples in an attractive and distinctive way were made by A. R. Gorham, Grey's Mills and Mrs. Darcus, Fredericton.

A. R. Gorham and A. Sangster had the most artistic collections of fruits grown on any one farm.

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The butter and cheese were judged by L. C. Daigle. Following are the awards:

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Twenty lbs. creamery prints.—1, J. H. Martin; 2, Dunk River Dairying Co.; 3, W. C. Lewis, Little Bass River N.S.

Crock or tub—1, Charles W. Parent, R.F.D. No. 4; 2, Miss A. Kirk, The Barony; 3, Mrs. N. A. Sterritt, Grey's Mills.

Box of prints, private dairy—1, C. W. Parent; 2, McFarlane Bros., Fox Harbor Point; 3, B. Goodspeed, Penniac.

Butter, fancy display—1, C. W. Parent; 2, Miss J. Staveley; 3, Miss A. Kirk, The Barony; 4, T. W. Smith, Durham Bridge; 5, Mrs. L. H. D. Foster, P.E.I.; 6, McFarlane Bros.

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Not less than 30 lbs., factory made.—1, A. J. McGilvray; 2, Archie Cousins; 3, L. J. Murphy.

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THE HORSES

There was a good showing of Clydesdale, Carriage, General Purpose, Heavy and Roadster Horses. The Clydesdale classes were particularly interesting. There were enough good horses below the money ranks that would make a creditable showing at any fair.

Wm. Graham, Claremont, Ont., and H. G. Boag, Barrie, Ontario, placed the awards in the Light and Heavy Horse classes resepctively.

Thoroughbreds—The aged stallion section of the Thoroughbred class brought out the horses, Ostrich, Melcino and Bendemeer. They were awarded prizes in the order named. Motorman, by Cyclist, was the only yearling. Geo. M. Holmes had the only Thoroughbred mare in the ring.

Standard Breds—Were few in number. Jewett's Tryfast led the aged stallion section with A Game of Chance by the Patchen Boy, and Roy Volo by Nervolo in second and third places. There was practically no competition in any other section of the Standardbred class.

Hackneys—Were all few in numbers. R. A. Snowball's Filgrave Royal John was the best aged stallion. W. M. Johnson, Newcastle, had the only brood mare with foal by her side, Ardmersay May Queen and her foal by Filgion Royal John.

Coach Horses—The only representatives of the coach horse breed was the aged stallion Danois and an aged mare shown by H. C. Jewett.

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Ten mares came forward in the aged class. R. A. Snowball's Rose of Litterte and Miss May in first and third places, sandwiched McFarlane Bros.' Bess Spencer, while further down the line were McFarlane Bros.' Balmangan Belle, Wm. Clark's Silver Lock and Silver Blossom, Geo. Dowe's Meadow Lawn, Ida and Nellie Dow and Clover Nook Stock Farm's Bonnie Bell. Among the prize winning foals in the Clydesdale class as well as in the general purpose and heavy draught classes were a strong representation of the get of H. C. Jewett's Clydesdale stallion Day Dream. Baron Squire was first with three of his get.

Percherons—The only representative of the Percheron breed were the stallions, Gresham, Avocation, Indican and Meinier which were placed in the order named and two two-year-old stallions shown by F. J. Sullivan, Fredericton.

Suffolk Punch Horses—Were represented by the aged stallions, Almo and Abner of Mt. Hermon, owned by P. K. Stuart of Carleton county and Shaw Bros. of Andover respectively.

The Beef Cattle

There was a good showing of beef cattle. Although competition was not very keen in some of the classes, the various herds were out in a very creditable condition. R. A. Snowball's herd captured the lion's share of the red ribbons in the Shorthorn class. Fred Cromwell, Cookshire, Que.; McCullough Bros., Mouth of Keswick, N. B.; John R. Jewett, Macniquae, N.B., and H. Baldwin, Chatham, N.B., were the other exhibitors of Shorthorns.

Wm. O'Brien and Jas. O'Brien of Windsor Forks, had everything their own way in the Hereford class. The white faces showed to good advantage. Wm. Pinkney, of Melborne, N.S. met no competition in the Devon class. The battle royal in the Aberdeen Angus class was between J. M. Laird & Son, and A. G. Spafford. The majority of the red ribbons went to the Laird herd.

A. J. Howden, Columbus, Ont., placed the awards.

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The showing in the dairy cattle class was creditable to the respective exhibitors, but the exhibitors were not numerous enough. McIntyre Bros. met with no competition in the Ayrshire class with the exception of a few individuals exhibited by Clover Nook Stock Farm. Harding Bros. had pretty nearly a clean sweep with their Holsteins. Hooper Bros., and John Hooper, Compton, Que., showed some nice Canadian cattle. H. W. Corning, Chegoggin, N.S., H. A. Dickson, Truro, and R. R. Black, Amherst, N. S., showed their well kept Guernseys. The fight was on between the Corning and Dickson herds. The reader of the prize winnings will see that they were pretty evenly matched, regular tit for tat from start to finish.

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The Charlottetown Exhibition

The Prince Edward Island Provincial Exhibition was held in Charlottetown on September 21 to 24 inclusive. The attendance, owing largely to the lateness of the season and the fact that practically all the farmers were too busy with their harvest to attend to anything else, even an exhibition, was not as large as that of 1914. The weather also was somewhat to blame, the equinoxial gales were very disagreeable.

As an exhibition of what Prince Edward Island can produce in the way of live stock, field and garden crops, art work, etc., it was a splendid success. As already stated, the busy harvesting season occurring so late in September, helped very materially to keep the exhibits of fruit and vegetables at a lower ebb than would have been the case were the farmers through with their harvesting work.

There was a good showing of heavy horses. Mr. Greenlees, of Bowmanville, Ont., who judged this class, expressed surprise on finding such excellent quality in the ring. He said the Prince Edward Island horses compared very favorably with those seen at Toronto and other central Canadian fairs.

W. J. Stark, of Edmonton, Alta., placed the awards in the light horse classes. He was particularly pleased with the 1915 crop of foals. He said they were the best he had seen in any show ring in Canada.

The Dairy Cattle were judged by P. D. McArthur, of Howick, Que., and R. S. Stevenson, of Ancaster, Ont. Mr. Grant of Brockton, Ont., placed the awards in the Beef Cattle classes. Col. McEwen, London, Ont., judged the sheep, and W. Jones, Zenda, Ont., dispensed justice in the Swine classes.

Competition was quite keen in the respective Dairy classes. The veteran exhibitors were out in full force and there was a fair number of new comers. Despite the fact that a large number of the best Prince Edward Island sheep were at the Fredericton exhibition the breeders who patronized the home fair made a good showing.

The Swine sheds were well filled with some of the Island's best. See the list of awards for "Who is Who?" in the Prince Edward Island Swine breeding industry.

One of the big features of the Charlottetown exhibition was the display of cheese. The plan was to have a June, July, August and September cheese from each and every cheese factory in the province. The plan was worked out by Mr. Harry Mitchell, Dairy Superintendent, and the response was quite satisfactory. Geo. H. Barr, Ottawa, placed the awards as follows:

Name of Factory.	Score	Rank.
Lot 16	95.80	1
Gowan Brae	95.57	2
Red Point	95.52	3
Orwell	95.1	4
New Perth	95.1	4
Hazelbrook	95.02	6
Kensington	94.87	7
Dundas	94.62	8
Red House	94.5	9
Hillsboro	94.47	10
Tyne Valley	94.45	11
Vernon River	94.35	12
Stanley Bridge	94.35	12
Park Corner	94.2	14
Tignish	94.2	14
Egmont Bay	94.02	16
Kinkora	93.9	17
Hamilton	93.62	18
Grand River	93.57	19
Emerald	93.57	20
Alberton	93.35	21
Summerside	92.92	22
Wiltshire	92.85	23
Cornwall	92.82	24

Souris East, O'Leary, New Glasgow, Mount Stewart, Murray Harbor and Lakeside did not show any cheese.

The scores given above are the averages obtained by dividing the aggregate score of the four cheeses from each factory by four. The cheese display was the biggest feature of its kind ever staged at a Maritime Province exhibition.

PRIZE WINNERS AT CHARLOTTETOWN EXHIBITION

HORSES

Carriage

Mare with foal at foot.—1, A. H. Boswell, Little York; 2, Almon Boswell, French Fort; 3, George R. Montgomery, City.

Carriage mare of gelding, 15½ hands over to be shown in carriage.—1, Mrs. A. M. Gaudet, Tignish; 2, Geo. L. Boswell, French Fort; 3, Prowse Bros., City.

Carriage mare or gelding under 15½ hands to be shown in carriage.—1, John Livingston, New Dominion; 2, A. E. McBeth, Marshfield; 3, J. P. Hooper, City.

Champion mare, any age. (To compete in this section, mare must have been shown in some section in this class—1, John Livingstone, New Dominion.

Pair of horses, geldings or mares, or one of each to be shown to a carriage, Horse to count 60 per cent., Appointment 40 per cent. Horses to have good conformation, quality and manners. Horses to be property of exhibitor who must be owner at time of making the entries.—2, John McPhee, Freetown.

CLASS 3—Standard Bred Horses

Stallion, 4 years old and upwards.—1, Hammond Kelly, City; 2, John Richard, Bideford; 3, J. H. G. Murphy.

Stallion, 2 years old.—1, D. W. White, York Point.

Filly, 2 years old—1, Thos. C. Lathen, Sylvester, Pictou Co., N.S.; 2, J. Stanley Wedlock, City; 3, Dr. Leckie, City.

For best 2 year old stallion Diploma —1, D. W. White, York Point.

Mr. Hammond Kelly, of Southport, P.E.I., offers the following special prizes:

For foal of 1915 sired by Standard Bred Stallion Mayor Todd.

1, Wm. Lane, Southport; 2, G. H. Jones, Harrington; 3, W. F. Burke, Royalty; 4, Neil McKenzie, Canoe Cove.

Mr. J. H. G. Murphy of Charlottetown, P. E. I., offers the following special prizes:

For Foal of 1915, sired by Standard Bred Stallion, Prince Marjor.—1, Alex. R. McKay, City.

CLASS 4—Saddle Horses

Gentleman's Saddle Horse, Gelding or Mare, not less than 15½ hands and must be shown under saddle and ridden by a gentleman,—1, Charles McDonald, Summerside; 2, Hammond Kelly, City; 3, J. Heber Crosby, Marshfield.

Ladies' Saddle horse, gelding or mare, not less than 14 hands, must be shown under saddle and ridden by a lady.—1, Stephen Holroyd, Winsloe; 2, Miss Ethel Haszard, City; 3, Reagh Horne, Winsloe.

Special Prize given by Hon. John Richards of Bideford for foal of 1915, sired by the Standard Bred Stallion "Captain Aubrey."—1, H. H. Boswell, Little York; 2, F. L. Haszard, City; 3, Arthur McEachern, City.

CLASS 5—Hackney Horses

Stallion, 3 years old and upward.—1, George L. Boswell, French Fort.

CLASS 6—Roadsters

Mare or Gelding, 4 years old and upwards—1, George Stewart, Keppock;; 2, Robert McCallum, Dunstaffnage; 3, J. Stanley Wedlock, City.

Filly or Gelding, 3 years old.—1, H. D. Jenkins, West Royalty; 2, D. H. White, York Point; 3, Harold Newsom, East Royalty.

Brood mare with foal of same breed by her side.—1, Byrne Bros., North River; 2, W. E. Agnew, City; 3, Alex. R. McKay, City.

Mare or gelding to be shown in carriage.—1, H. G. Reddin, City; 2, Leith Boswell, Victoria; 3, Mary Tidmarsh, City.

CLYDESDALES

CLASS 7.—Clydesdales Registered.

Stallion, 4 years old and upwards—1, John Richards, Bideford; 2, David Reid, Montague; 3, K. B. McKinley, North River.

Stallion, 3 years old.—1, Roper Bros., Royalty; 2, H. B. Frizzle, Cornwall.

Stallion, 2 years old.—1, D. C. McKinley, York Point; 2, William Godfrey, Marshfield; 3, Edward Currie, Fairview.

Stallion, 1 year old.—1, J. Heber Crosby, Marshfield; 2, Boyd Livingstone, Clyde River; 3, Cass Bros., North River.

Filly, 3 years old.—1, John Lea, Victoria; 2, Wm. Godfrey; 3, John Richards, Bideford.

Filly, 2 years old—1, Paterson Walker, Freetown; 2, Edgar Heartz, Marshfield; 3, J. Heber Crosby.

Filly, 1 year old—1, W. W. Crosby, Cornwall; 2, J. Heber Crosby; 3, Edgar Heartz.

Foal of 1915.—1, A. H. Boswell, Little York; 2, Edgar Heartz; 3, Wm. Lane, Southport.

Mare with foal at foot—1, Edgar Heartz; 2, J. Heber Crosby; 3, Wm. Lane.

Champion Stallion, any age.—1, John Richards (Diploma.)

Champion mare, any age.—1, John Richards, (Diploma).

Stallion and 3 of his get—Get not to exceed 3years old.—1, John Richards (Diploma.)

SPECIAL PRIZES GIVEN BY THE CLYDESDALE HORSE ASSOCIATION OF CANADA

For the best Clydesdale Stallion any age.—1, John Richards, Bideford; 2, Wm. Godfrey, Marshfield; 3, David Reed, Montague.

For the best Clydesdale Mare any age.—1, Jabez Lea, Victoria; 2, Paterson Walker, Freetown; 3, J. Heber Crosby, Marshfield.

For the best Island bred Cldyesdale mare—1, W. W. Crosby, Cornwall; 2, Jabez Lea, Victoria; 3, J. Heber Crosby.

For the best single mare or gelding in harness, sired by a registered Clydesdale stallion—1, Edgar Heartz; 2, D. C. McKinley; 3, Mrs. Daniel F. Fraser, North River.

Best foal of 1914, sired by a pure bred Clydesdale stallion, registered as above from a grade mare of any breed—1, Perley Mutch, Southport; 2, J. Walter Jones, City; 3, Charles Bryenton, Winsloe.

1, Walter Jones; 2, Charles Bryenton.

Special Prizes Given by Hon. John Richards

For foals of 1915, sired by the Clydesdale stallion Baron Kelvin.—1, A. H. Boswell, Little York; 2, Perley Mutch, Southport; 3, Wm. Lane, Southport.

CLASS 9—Percherons

Stallion, 4 years old and upwards.—1, David Reid, Montague; 2, Alex. R. McKay, City.

Filly, 3, years old.—1, Alex. R. McKay.

Filly, 2 years old—1, Alex R. McKay.

Filly, 1 year old.—1, Alex. R. McKay.

Foal of 1915.—1, Alex. R. McKay.

Mare with foal at foot—1, Alex. R. McKay.

Champion stallion, any age.—1, David Reid (Diploma.)

Champion mare, any age—1, Alex. R. McKay (Diploma).

CLASS 10.—Draft Horses

Filly, 3 years old.—1, D. C. McKinlay, North River, (York Point); 2, Benjamin Rodd, Prackley Point Road; 3, J. Heber Crosby, Marshfield.

Filly, 2 years old—1, Perley Mutch; 2, Oliver Munn, Winsloe.

Filly, 1 year old.—1, Wm. Crosby, Cornwall; 2, H. C. Robertson, Marshfield; 3, D. C. McKinley, York Point.

Foal of 1915.—1, Perley Mutch; 2, John H. Pierce, Winsloe Station; 3, J. Walter Jones, City.

Mare with foal at foot—1, Bert Trowsdale, Hampton; 2, Charles Bryenton, Winsloe; 3, Mrs. Henry Jones, Hazelbrook.

Pair of Draft Horses, not less than 1400 lbs. each, both to be owned by one person for at least 30 days before the exhibition, and to be shown in harness to a truck wagon (pair may be 2 geldings or 2 mares or mare and gelding).—1, D. C. McKinley, York Point; 2, Benj. Road, Brackley Point Road; 3, Donald McMillan, City.

Draft mare or gelding, not less than 1400 lbs. (not one pair shown in Section 6.)—1, George Simmons, West Royalty; 2, Fred Turner, Winsloe Road; 3, Alex. R. McKay, City.

CLASS 1—Special Prizes Given by the Charlottetown Steam Navigation Company

To the 4 best draft colts, under 3 years old and get of any one registered draft stallion (may be colts or fillies or both), entry to be made in the name of the owner of the sire. $20—1, W. W. Crosby, Cornwall.

Given by the Hon John Richards of Bideford, for foal of 1915 sired by the Standard bred stallion "Captain Aubrey" $16, $12.—1, Lon Pigot, City; 2, Maurice Blake, City; 3, R. W. Younker, Winsloe.

CLASS 12.—General Purpose Horse.

Mare or Gelding, 4 years old and upwards—1, Goodwill McPhail, Argyle Shore; 2, Maurice Blake, City; 3, R. W. Yonker, Winsloe.

Mare or gelding, 3 years old.—1, Maurice Blake, City; 2, Vernon McMillan, City.

Brood mare with foal at foot.—1, W. F. Burke, Charlottetown Royalty.

Matched team, geldings or mares, or a mare and a gelding, shown in harness, not to exceed 1300 pounds each.—1, W. F. Burke, Charlottetown Royalty.

CLASS 13.—Walking Horses

Mare or gelding, to be shown in carriage.—1, Byrne Bros., North River; 2, George Stewart, Keppoch; 3, Hugh McKinnon, Charlottetown Royalty.

CLASS 15.—Pair of Ponies

Single pony, 12 hands and under, in harness.—1, Clifford Chandler, City; 2, Patrick Keenan, City; 3, Alex. R. McKay, City.

CATTLE

CLASS 16—Shorthorns

Bull, 3 years old and upwards.—1, Mrs. Alex. D. McLean, Rice Point; 2, J. A. Stewart, Southport.

Bull, 2 years old—1, J. M. Leard & Son, Kelvin Grove; 2, Francis Chowan, Winsloe Station; 3, J. W. Callbeck & Sons, Summerside.

Bull, 1 year old—1, Albert S. Boswell, Pownall; 2, Cass Bros., North River.

Bull calf, under one year and over 6 months—1, J. M. Leard & Son.

Bull calf, under 6 months and over 3 months—1, Cass Bros.; 2, Albert S. Boswell.

Cow, in milk or calf, 3 years old and upwards—1, J. W. Callbeck & Sons; 2, J. M. Leard & Son; 3, J. M. Leard & Son.

(Continued on Page 14)

The Sydney Exhibition

The fourth annual Cape Breton Island exhibition was held in Sydney on the 21st to the 24th of September. The dates clashed with Charlottetown and Fredericton, and Cape Bretonites who wished to visit either of the latter cities were obliged to be absent from home during the Sydney fair dates. This and the large number of men and boys who have left Cape Breton homes to serve their king and country tended to reduce the aggregate attendance.

The quality of the exhibits in the various departments of the fair was well up to the high average of other years, but the quantity was considerably reduced compared with the fair of 1914.

Following is a list of the prize winners:

HORSES

Draught Horses

Stallion, any pure breed, over 3 years—1, H. A. Moffatt, Groves' Point, N. S.

Mare or gelding, any breed, or grade over 4 years—1, R. M. MacLeod & Son, Glen Farm, Groves Point; 2, M. W. J. MacKenzie, Coxheath; 3, Murdo McKenzie.

Mare or gelding, any breed or grade, 3 years old—1 and 2, D. R. Nicholson, Coxheath.

Mare or gelding ,any breed or grade, 2 years old—1, Fred. J. McLeod, Sydney Mines.

Mare or gelding, any breed or grade, 1 year old—1, Chas. Andrews, Coxheath; 2 and 3, D. R. Nicholson.

Mare or gelding, any breed or grade, under 1 year—1, H. P. MacKenzie, Blackett's Lake.

Brood mare with foal by side—1, H. P. MacKenzie.

Best mare or gelding, any age—Diploma, R. M. MacLeod & Sons.

Best stallion, any breed, any age—Diploma, H. A. Moffatt.

Stallion and three of his get.—Diploma, H. A. Moffatt.

General Purpose Horses

Mare or gelding. 4 years old or over—1 and 2, Andrew McLellan, Glenville, N.S.; 3, A. J. McLeod, South Bar.

Mare or gelding, 3 years old—1, R. M. Jackson, Jacksonville; 2, M. W. J. MacKenzie; 3, Murdo MacKenzie.

Mare or gelding, 2 years old—1, J. Webster Allen, North Sydney; 2, C. A. Munn & Son, Leitches' Creek; 3, Andrew McLellan.

Mare or gelding, 1 year old—1, Norman Johnson, Leitche's Creek.

Mare or gelding, under 1 year—1, S. D. Gillis & Son, East Bay; 2, R. M. Jackson; 3, Murdo MacKenzie.

Brood mare with foal by side—1, S. D. Gillis & Son; 2, R. M. Jackson; 3, Murdo McKenzie.

Matched pair, shown in harness, open to farmers only—1, S. D. Gillis & Son.

Brood mare and two of her progeny—Diploma, S. D. Gillis & Son.

Best mare or gelding, any age—Diploma, Andrew McLellan.

Carriage Horses

Stallion, pure bred, 3 years or over—1, S. D. Gillis & Son.

Mare or gelding, any breed or grade over 4 years—1, John McQueen, Leitches Creek; 2, Fraser McKenzie, Reserve Mines; 3, Arthur J. McDonald, Sydney.

Mare or gelding, any breed or grade 2 years old—1, Geo. Oland, Coxheath.

Mare or gelding, any breed or grade 1 year old—1, J. G. McDonald, Sydney; 2, Geo. Oland.

Mare or gelding, any breed or grade under 1 year—Joseph Rose, Sydney; 2, Geo. Oland.

Brood mare with foal by side—1, Geo. Oland; 2, Joseph Rose.

Matched pair, shown in harness—1, Geo. Oland.

Brood mare and two of her progeny—1, Geo. Oland.

Roadster Horses

Stallion, pure bred, 3 years or over.—1, Chas. Thompson, North Sydney.

Mare or gelding, any breed or grade 4 years old—1, M. D. McPhee, Sydney; 2, J. Webster, Allen; 3, H. C. Musgrave, North Sydney.

Mare or gelding, any breed or grade 3 years old—1, R. M. MacLeod & Son; 2, Wm. Hines, Reserve Mines.

Mare or gelding, any breed or grade under 1 year—1, Parker M. Rice, George's River; 2, A. N. Morrison, Sydney Mines.

Brood mare with foal by side—1, Parker M. Rice; 2, A. N. Morrison.

Best mare or gelding, any age—Diploma, M. D. McPhee.

Ponies, 12½ Hands and Under.

Pony, any age—1, M. Matheson, Whitney Pier; 2, William C. Nicholson, Coxheath; 3, Michael Sullivan, Sydney.

CATTLE

Grade Beef Catttle

Fat steer or cow, 3 years old—1 and 3, D. R. Nicholson; 2, R. M. Jackson.

Fat steer or heifer, over 1 year.—1 and 2, Jas. Marnell, Luigan Road.

DAIRY CATTLE

Holsteins

Bull, 1 year old—1, D. R. Nicholson; 2, H. C. Musgrave.

Bull, senior calf—1, D. R. Nicholson.

Bull, junior calf—1, A. K. Jackson, Jacksonville.

Cow in milk, 4 years or over—1, and 2, D. R. Nicholson.

Dry cow, 4 years old—1 and 2, D. R. Nicholson.

Cow, 3 years old—1, D. R. Nicholson.

Dry cow, 3 years old.—1, D. R. Nicholson; 2, Jas. Kennedy, Glace Bay.

Cow, 2 years old—1, A. K. Jackson.

Heifer, 2 years old—1, D. R. Nicholson.

Heifer, 1 year old—1, D. R. Nicholson; 2, A. K. Jackson.

Heifer, senior calf—1, D. R. Nicholson

Heifer, junior calf—1 and 2, D. R. Nicholson.

Best bull, any age—Diploma, D. R. Nicholson.

Cow and two of her progeny—Diploma—D. R. Nicholson.

Herd—1, D. R. Nicholson.

Breeders' young herd—1, D. R. Nicholson.

Champion cow—1, D. R. Nicholson.

Ayrshires

Bull, 3 years and over—1, G. B. Macdonald, Sydney; 2, A. R. Richardson, South Bar; 3, M. W. Ross & Son, Sydney Mines.

Bull, 2 years old—1, M. W. Ross & Son.

Bull, 1 year old—1, Neil McKinnon, Up. Kempt Head; 2, John R. Redmond; 3, J. W. McGuire, Sydney.

Bull, junior calf—1 and 2, M. W. Ross & Son.

Cow in milk, 4 years or over—1, M. W. Ross & Son; 2, John R. Redmond; 3, John B. Musgrave, North Sydney.

Dry cow, 4 years old—1 and 2, Alex. Boutilier, Sydney Forks; 3, M. W. Ross & Sons.

Cow, 3 years old—1, John R. Redmond; 2, R. M. Jackson.

Dry cow, 3 years old—1, N. J. McNeil, Sydney Forks.

Cow, 2 years old—1, M. W. Ross & Son; 2, John R. Redmond.

Heifer, 1 year old—1, M. W. Ross & Son; 2, Alex. Boutilier; 3, Colin Collier, "Burnside," Coxheath.

Heifer, senior calf—1, Alex. Boutilier; 2, M. W. Ross & Son.

Heifer, junior calf—1, John R. Redmond; 2 and 3, M. W. Ross & Son.

Best bull, any age,—Diploma, G. B. McDonald.

Bull and three of his get—Diploma M. W. Ross & Son.

Cow and two of her progeny—Diploma, M. W. Ross & Son.

Herd—1, M. W. Ross & Son; 2, John R. Redmond; 3, Alex. Boutilier.

Breeders' young herd—1, M. W. Ross & Son.

Champion cow—1, M. W. Ross & Son.

JERSEYS

Bull, 3 years old—1, H. A. Moffatt & Son.

Bull, 1 year old—1, J. Webster Allen; 2, Norman Johnston; 3, H. P. MacKenzie.

Bull, junior calf—1, H. A. Moffatt & Son; 2, Donald Johnston, Leitch's Creek.

Cow in milk, 4 years old—1, John McQueen; 2, Donald Johnston; 3, J. Webster Allen.

Dry cow, 4 years old—1, J. Webster Allen; 2, H. A. Moffatt & Son; 3, H. P. MacKenzie.

Cow, 3 years old—1 and 2, H. A. Moffatt & Son.

Cow, 2 years old—1, M. W. Ross & Son.

Heifer, 2 years old—1, H. A. Moffatt & Son; 2 and 3, J. Webster Allen.

Heifer, 1 year old—1, H. A. Moffatt & Son; 2. Donald Johnston.

Heifer, senior calf—1, Donald Johnston; 2, John MacQueen; 3, J. Webster Allen.

Heifer, junior calf—1, 2 and 3, H. A. Moffatt & Son.

Best bull, any age—Diploma, H. A. Moffatt & Son.

Bull and 3 of his get—Diploma, H. A. Moffatt & Son.

Herd—1, H. A. Moffatt & Son; 2, Donald Johnston.

Breeders' young herd—1, J. Webster Allen; 2, H. A. Moffatt & Son.

Guernseys

Bull, 3 years old—R. M. Jackson.

Bull, 2 years old—1, Murdo McKenzie; 2, W. W. Johnston.

Bull, 1 year old—1, E. J. Johnston, George's River.

Bull, junior calf—1, R. M. Jackson.

Cow, 4 years old and over—1, Murdo MacKenzie; 2, R. M. Jackson.

Dry cow, 4 years old—1, Murdo MacKenzie.

Cow, 3 years old—1, Murdo MacKenzie.

Cow, 2 years old—1, Murdo MacKenzie.

Heifer, 2 years old—1, R. M. Jackson.

Heifer, 1 year old—1, R. M. Jackson.

Heifer, senior calf.—1 and 2, R. M. Jackson.

Heifer, junior calf—1 and 2, R. M. Jackson.

Best bull, any age—Diploma, Murdo MacKenzie.

Herd.—1, Murdo MacKenzie.

Breeders' young herd—1, R. M. Jackson.

Champion female—Murdo MacKenzie.

Grade Jerseys

Cow, 4 years old—1, D. R. Nicholson; 2, J. B. Musgrove; 3, A. R. Richardson.

Dry cow, 4 years old—1, Murdo McKenzie; 2, M. W. J. McKenzie; 3, J. Webster Allen.

Cow, 3 years old—1, H. P. MacKenzie; 2, Geo. Oland.

Dry cow, 3 years old—1, A. N. Morrison; 2, H. P. MacKenzie.

Cow, 2 years old—1, C. A. Munn & Son; 2, A. N. Morrison; 3, H. C. Musgrove.

Heifer, 2 years old—1, H. A. Moffatt & Son; 2, Donald Johnston; 3, Geo. Oland.

Heifer, senior yearling—1, H. A. Moffatt & Son.

Heifer, junior yearling—1, J. W. Webster Allen; 2, H. A. Moffatt & Son; 3, Nelson Beaton, Coxheath.

Heifer, senior calf—1, H. A. Moffatt & Son.

Heifer, junior calf—1, Jas. Marnell.

Grade Guernseys

Cow, 4 years old—1, E. J. Johnston; 2, John McQueen; 3, A. K. Jackson.

Dry cow—4 years old—1, John McQueen; 2, John R. Redmond; 3, M. W. J. MacKenzie.

Dry cow, 3 years old.—1, M. W. J. MacKenzie.

Cow, 2 years old—1, Murdo McKenzie; 2, H. P. McKenzie; 3, Colin Collier.

Heifer, 2 years old—1, Murdo McKenzie; 2, Geo. Oland.

Heifer, senior yearling—1, Murdo McKenzie; 2, M. W. J. MacKenzie.

Heifer, junior yearling—1, H. C. Musgrove; 2, Collin Collier; 3, John McMullin.

Heifer, senior calf—1, Wilson Gillis, Georges' River; 2, Murdo McKenzie; 3, H. P. MacKenzie.

Heifer, junior calf—1, D. R. Nicholson; 2, Murdo McKenzie.

Grade Ayrshire

Cow, 4 years and over—1, A. R. Richardson: 2, N. J. McNeil; 3, J. Webster Allen.

Dry Cow, 4 years old—1, R. M. Jackson; 2 and 3, N. J. McNeil.

Cow, 3 years old—1, A. R. Richardson.

Cow, 2 years old—1, H. C. Musgrove; 2, N. J. McNeil.

Heifer, 2 years old—1, Geo. Oland.

Heifer, senior yearling—1, Nelson Beaton; 2, Wilson Gillis; 3, Jas. Marnell.

Heifer, junior yearling—1, Alex. Boutilier; 2, A. R. Richardson.

Heifer, senior calf—1, A. R. Richardson; 2, N. J. McNeil.

Heifer, junior calf—1 and 2, John McMullin; 3, N. J. McNeil.

Grade Holsteins

Cow, 4 years and over—1, J. W. McGuire, Sydney; 2, John McQueen; 3, C. A. Munn & Son.

Dry cow, 4 years old—1 and 3, D. R. Nicholson; 2, C. A. Munn & Son.

Cow, 3 years old—1, Murdo McKenzie; 2, C. A. Munn & Son; 3, A. K. Jackson.

Dry cow, 3 years old—1, Geo. Clare, Sydney; 2, Murdo McKenzie; 3, A. K. Jackson.

Cow, 2 years old—1 and 2, D. R. Nicholson.

Heifer, 2 years old—1, John McQueen; 2, D. R. Nicholson; 3, C. A. Munn & Son.

Heifer, senior yearling—1 and 2, John McQueen; 3, D. R. Nicholson.

Heifer, junior yearling.—1, J. B. Musgrove; 2, John McQueen; 3, A. K. Jackson.

Heifer, senior calf—1, A. K. Jackson.

Heifer, junior calf—1, John McQueen; 2, C. A. Munn & Son; 3, A. B. McPhee, Leitches' Creek.

Grade Herds

Grades, best herd, 5 cows, 3 of which must be over 2 years—1, John McQueen; 2, D. R. Nicholson; 3, C. A. Munn & Son.

Grades, best herd, 4 heifers under 3 years.—1, John McQueen; 2, Murdo McKenzie; 3, C. A. Munn & Son.

Best cow, any age or breed—Diploma, D. R. Nicholson.

Best grade cow, any age—Diploma, J. W. McGuire.

Best Bull, any age or breed (dairy)—Diploma, G. B. McDonald.

Best pure bred herd—D. R. Nicholson.

SHEEP

Leicesters

Ram, 2 years old—1, Nelson Beaton.

Ram, 1 year old.—1, Mrs. R. Morrison, Cape North.

(Continued on Page 26)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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OCTOBER 12, 1915.

DATES OF ISSUE.

October ..... -26
November 9-23
December 7-21

THE PESTIFEROUS SCRUB.

Unfortunately there are in every community some farmers who are absolutely indifferent to the rights of their neighbors and who are a constant drawback to the general development of the district as a whole. Every year complaints are made concerning the damage which scrub bulls do when allowed to run loose over the countryside. Many of these strays are yearlings that some shiftless man is too negligent to castrate, while some farmers are so short-sighted as to keep scrub bulls for the purpose of breeding from them. There is absolutely no license for scrub bulls being allowed to run loose. They are a menace to the production of pure-bred stock and act detrimentally to the whole district in that buyers do not come where scrub bulls are allowed to run loose. D. B. Howell, of Langenburg, a prominent and progressive dairyman, says concerning this question, that "scrub bulls are a menace to growing heifers. Yearling heifers come in season as good pasture comes, are bred on the commons and then calve early the next spring when the heifer is in her very lowest condition of flesh and thrift. As a result calf and heifer do not do well. To raise the calf with such a start stunts the heifer and detracts $25 from her value as breeding stock. This amount I consider low in grade stock, but to have a little yearling of pure breeding gett in calf from such a bull entails a loss of $100 at least."

"The remedy for this situation lies with the municipal councils. They pass bylaws governing strays and prescribe penalties. Then, again, this nuisance could be largely done away with if men had enough backbone to run such scrubs into the pound. The reason it isn't done is that a man is afraid of making an enemy of a neighbor. I consider the man no friend of mine who permits a scrub to run at large and damage my stock."

The question of offending neighbors should never enter into consideration in this matter. Scrub bulls should not be used by farmers on their own stock. Either the provincial department of agriculture of the Dominion department if written to will make it possible for a pure-bred bull to be placed for service in any district, and farmers are not taking full advantage of the opportunity afforded them if they do not make use of this offer.

Try to use pure-bred bulls yourself and pound every scrub bull thta is allowed by a shiftless neighbor to run loose.

SOIL FERTILITY AND LATE CROPS

A writer in the Breeders' Gazette says:

"Any young animal inadequately nourished before it is weaned or thereafter will require a longer period than a well-fed youngster of the same age and breeding in which to mature. The attainment of full growth is retarded and delayed by an insufficient food supply in the case of plants as well as animals. Crops grow more rapidly and hence mature in a shorter time on fertile land than on impoverished soils. Late planting or sowing often causes plants in thi nsoils to race with the season, and they more often lose than win, Late-planted corn is now in a desperate chase, in some parts of the country, with Jack Frost hard upon its heel. Planted at the same time in a highly productive soil, the same corn in the great majority of cases would now be so near the goal that the pursuer could not overtake it. The enemy's pursuit would end in failure; the pursued would win.

"Large areas are planted to corn comparatively late every year. On account of rains theacreage last spring planted four to six weeks late was extraordinarily large. Thousands of fields are still well out in the danger zone; it will take them several weeks to mature. Meantime, Jack Frost is nipping green things in some of the northern regions, and nobody knows when he may invade the cornbelt. If the next few weeks are not favorable to the maturing of late corn, he will probably chase vast armies of immature standing stalks into silos which constitute the last line of defence.

"Practical experience and investigations at many of the experiment stations prove conclusive ly that, to quote J. G. Hutton of the North Dakota station, "crops mature earlier on a soil that is well supplied with plantfood than on a soil which contains an insufficiency of one or more of the elements of plantfood." A week or even a few days of induced or extra earliness, in a season like the present, might mean hundreds of dollars saved. View it from any practical point of view, a highly fertile soil pays regularly and dependably, whether the season be wet, dry, long or short. The possession of such a soil is nine points in the ten by which we measure agricultural returns in the court of experience."

MAKING PROGRESS.

Walking is a process of taking a chance of falling and then catching yourself before you do it. The speed at which one goes forward, or progresses, depends on the frequency with which he takes chances; the distance to which he walks, depends on the number of such chances he takes—and on his ability to keep from falling each time he takes a chance. If he does not take the chance at all, he stands still.

It is a good deal the same way about advancing or making progress in anything else. No one is able to make any advancement whatever in anything if he does not take a chance of failing at it; for any undertaking has in its an element of chance, or the possibility of failure. If one does not take a chance of falling, he does not succeed in walking; if he does not take the chance of failure involved in an undertaking, he never accomplishes any part of it.

The man who never tries—who never takes a chance—never accomplishes anything more than merely existing. A man who never takes a chance is a coward rather than a wise man, and who wants to be a coward? To make a parody of an old familiar saying: "It is better to have tried and failed than never to have tried at all."

So do not be afraid if you have been thinking of trying something different this year. It is a moral certainty that you will never succeed if you do not try, and there is a chance that you may succeed if you try real carefully and provide against every known possibility of failure. So take the chance and very probably success will attend your efforts; at least there is no failure more disgraceful than the one of not even making the attempt.

AGRICULTURE ALWAYS BACK OF SUCCESS.

Back of all success lies the agricultural instinct of this great Dominion. The Vanderbilts 100 years ago seized the opportunities that were offered by railroading. It was electricity that forty years ago caused Edison to seize an opportunity. Every bit of land that can be cultivated is begging for boys to embrace the opportunity of soil production. The farmer is as much of a business man as the man who runs a store in town. Farming is one of the most needed and useful professions in the world. It takes as much brains, energy and thought to get results from the soil as it does to conduct any business—bank or store, mill or factory. On the farm lies the greatest possibilities of any profession in the world. What Edison did for electricity is needed by the world today as it never was before. There is no long waiting line of applicants seeking the opportunity offered by the soil. Every tillable acre is extending a beckoning hand to the sons and daughters of farmers—a higher standard of efficiency in agriculture should be aroused. Good roads, better rural schools, modern farm buildings are making the city resident envious of his rural neighbor. Back of all success lies the agricultural instinct of this great Dominion.

EDITORIAL NOTE

One of the interesting features staged in connection with the Poultry Department of the Halifax Exhibition was a modern two pen poultry house fully equipped. There was a flock of pure-bred birds in each pen. The house and yards were of the kind that Prof. Landry recommends the farmers of Nova Scotia to build. Ampleprovision was made for light, ventilation, sanitation, feeding, watering, and keeping records of the best layers. A farm flock kept under the ideal conditions outlined by Prof. Landry will be sure to add very materially to the farm revenues.

Prize Winners at Fredericton Exhibition

SHEEP

Cotswolds

Two shear ram—1, George Rettson, Truro.
Shearling ram.—1st, Chas. Symes, Minudie; 2nd, W. Craig, Nashwaaksis.
Ram lamb—1st, Chas. Symes; 2, Wm. Craig; 3, George Rettson.
Two shear ewe.—1, and 2, Chas. Symes; 3, W. Craig.
Shearling ewe—1 and 2, Chas. Symes.
Ewe lamb—1 and 2, Chas. Symes; 3, W. Craig.
Pen of sheep.—1, Chas. Symes.
Pen of lambs—1, Chas. Symes.

Leicesters

Two shear ram—1, Ray Burpee, Gibson; 2, G. Rettson.
Shearling ram—1, Ray Burpee; 2, G. Rettson.
Ram lamb—1, G. Rettson.
Two shear ewe—1, G. Retson.
Shearling ewe—1, G. Rettson.
Ewe lamb—1, G. Rettson.
Pen of sheep.—1, G. Rettson.
Pen of larbs—1, G. Rettson.

Lincolns

Two shear ram—1, C. D. Pugsley, River Hebert, N.S.: 2, Albert Boswall, P.E.I.
Shearling ram—1, Albert Boswall.
Ram lamb—1, C. Pugsley.
Two shear ewe—1, 2 and 3, C. Pugsley.
Yearling ewe—1, C. Pugsley; 2, A. Boswall.
Ewe lamb—1 and 2, C. Pugsley; 3, A. Boswall.
Pen of sheep—1, C. Pugsley; 2, A. Boswall; 3, C. Pugsley.
Pen of lambs—1, C. Pugsley; 2, A. Boswall.

Oxford Downs

Two shear rams—1, J. E. Baker & Sons, Barronsfield, N. S.; 2, B. Goodspeed, Penniac; 3, Clover Nook Stock Farm, Hartland.
Shearling ram—1, J. E. Baker.
Ram lamb—1, and 2, J. E. Baker & Sons; 3, Clover Nook Stock Farm.
Two shear ewe—1, and 2, J. E. Baker; 3, C. Pugsley.
Shearling ewe—1 and 2, J. E. Baker.
Ewe lamb—1 and 2, J. E. Baker; 3, Clover Nook Stock Farm.
Pen of sheep—1 and 2, J. E. Baker; 3, R. Kidney.
Pen of lambs—1, J. E. Baker & Sons; 2, Clover Nook Stock Farm.

Shropshires

Two shear ram—1, A. G. Spafford, Compton, Que.; 2, G. L. Boswall, P.E. I.; 3, J. E. Baker.
Ram lamb—1 and 3, G. L. Boswall; 2, A. G. Spafford.
Two shear ewe—1 and 2, G. L. Boswall, 3, A. G. Spafford.
Shearling ewe—1, G. L. Boswall; 2, A. G. Spafford.
Ewe lamb—1 and 3, G. L. Boswall; 2, A. G. Spafford.
Pen of sheep—1, G. L. Boswall; 2, A. G. Spafford; 3, W. H. Moore, Scotch Lake.
Pen of lambs—1, G. L. Boswall; 2, A. G. Spafford.

South Downs

Two shear ram—1, J. E. Baker; 2, Elijah Saunders, P. E. I.
Shearling ram—1, E. Saunders; 2, and 3, J. E. Baker.
Ram lamb—1 and 3, E. Saunders; 2, J. E. Baker.
Two shear ewe—1, and 2, J. E. Baker; 3, E. Saunders.
Four shearling ewe—1 and 2, E. Saunders; 3, J. E Baker.
Ewe lamb—1 and 2, J. E. Baker; 3, E. Saunders.
Pen of sheep—1 and 3, J. E. Baker; 2, E. Saunders.
Pen of lambs—1, J. E. Baker; 2, E. Saunders.

Hampshire Downs

Two shear ram—1, Cephas Nunn, P. E. I.
Shearling ram—1, C. Nunn.
Ram lamb—1 and 2, C. Nunn.
Ewe two shears—1 and 2, C. Nunn.
Shearling ewe—1, C. Nunn.
Ewe lamb—1 and 2, C. Nunn.
Pen of sheep—1, C. Nunn.
Pen of lambs—1, C. Nunn.

Cheviots

Ram, two shears—1, Chas. Symes.
Shearling ram—1, C. Symes; 2, C. Nunn.
Ram lamb—1, C. Nunn; 2 and 3, C. Symes.
Ewe, two shears—1, C. Symes; 2 and 3, C. Nunn.
Shearling ewe—1, C. Nunn; 2 and 3, C. Symes.
Ewe lamb—1 and 3, C. Nunn; 2, C. Symes.
Pen of sheep—1 and 3, C. Symes; 2, C. Nunn.
Pen of lambs—1, C. Nunn; 2, C. Symes.

Dorset Horns

Ram, two shears—1 and 2, Clover Nook Stock Farm; 3, A. C. Servant, Overton.
Shearling ram—1, A. C. Servant; 2, Clover Nook Farm.
Ram lamb—1, A. Servant; 2, G. L. Boswall; 3, Clover Nook Stock Farm.
Ewe, two shears—1 and 2, A. Servant; 3, G. L. Boswall.
Shearling ewe—1, A. Servant; 2 and 3, G. Boswall.
Ewe lamb—1 and 2, A. Servant; 3, G. Boswall.
Pen sheep—1, A. Servant; 2, G. Boswall; 3, Clover Nook Stock Farm.
Pen lambs—1, A. Servant; 2, G. Boswall; 3, Clover Nook Stock Farm.

Suffolk

Ram lamb—1, A. Boswall.
Ewe, two shears—1 and 2, A. Boswall.
Shearling ewe—1, A. Boswall.
Ewe lamb—1, 2 and 3, A. Boswall.
Pen sheep—1, A. Boswall.
Pen lambs—1, A. Boswall.

Grades

Pair of ewes long wool—1, W. Craig, Nassasis.
Pair ewes, shearlings—1, Ray Burpee; 2, E. Craig.
Pair lambs—1 and 2, Ray Burpee; 3, W. Craig.
Pen two ewes, two shearlings and two lambs—1, Ray Burpee; 2, W. Craig.

Grades, Medium Wool

1, Z. R. Estey, Lr. Fr. Village.
Pair shearling ewes—1, Z. R. Estey.
Pair lambs—1, J. E. Baker.

Fat Sheep

Ewe, over one year—1 and 2; J. E. Baker; 3, C. Nunn.
Wether, over one year—1, C. Pugsley; 2, C. Nunn; 3, Clover Nook Stock Farm.
Wether lamb—1, C. Nunn; 2, and 3, J. E. Baker.

Karakule Shrop.

Ram, over one year—1 N. B. Karakule Sheep Co.
Ram lamb—1 N. B. Karakule Sheep Co.
Ewe, over one year—1, N. B. Karakule Sheep Co.

FIELD GRAINS

White Wheat—1 ,A. R. Gorham, Gorham's Bluff; 2, Donnald Innes, Tobique River; 3, W. O'Brien & Sons, Windsor Forks; 4, B. Goodspeed, Penniac.
Red wheat—1, J. A. Johnston, Chatham; 2, G. M. Weade, Royalton; 3, MacFarlane Bros., Fox Harbor Point; 4, Donald Innes, Tobique River.
Banner Oats—1, J. W. Stevenson, Gladstone; 2, Donald Innes; 3, R. J. Shaw, Maryland; 4, Z. Estey, Lr. Fr. Village.
Oats, any other varietty—1, MacFarlane Bros.; 2, Donald Innes; 3, R. J. Shaw; 4, J. W. Stevenson.
Oats black—A. R. Gorham; 2, J. W. Stevenson; 3, W. O'Brien & Sons.
Barley, two rowed—1, W. O'Brien & Sons; 2, J. W. Stevenson; 3, Donald Innes; 4, McFarlane Bros.
Barley, six rowed—1, J. W. Stevenson; 2, MacFarlane Bros.; 3, George Holmes; 4, Donald Innes.
Buckwheat, rough—1, J. W. Stevenson; 2, J. W. Smith & Son, Durham Bridge; 3, G. J. Weade; 4, Clowes Currie, Macniquac.
Buckwheat, smooth—1, W. N. Sterritt, Grey's Mills; 2, A. R. Gorham; 3, W. O'Brien & Sons.
Rye—1, W. O'Brien & Sons; 2, D. Innes; 3, George Holmes.
Field Peas, large—1, James O'Brien, Windsor Forks; 2, W. O'Brien & Sons; 3, D. Innes.
Field peas, small—1, D. Innes; 2, W. O'Brien; 3, J. A. Johnston.
Beans, white—1, J. W. Smith & Sons.
Beans, colored—1, A. R. Gorham.
Timothy seed—1, R. J. Shaw; 2, J. W. Stevenson; 3, David Curry, Tobique River.
Alsike Clover—1, J. A. Johnston.

Sheaf Grain

White wheat—1, D. Inness; 2, Chas. Parent, City; 3, George Holmes; 4, B. Goodspeed.
Red wheat—1, D. Innes; 2, MacFarlane Bros.; 3, B. Goodspeed; 4, Geo. Holmes.
Oats, Banner—1, W. H. Moore, Scotch Lake; 2, D. Innes; 3, MacFarlane Bros.; 4, A. R. Gorham.
Any other varietty—1, D. Innes; 2, A. Gorham; 3, G. Holmes.
Black oats—1, D. Innes; 2, A. Gorham; 3, B. Goodspeed; 4, G. Holmes.
Barley, two rowed—1, D. Innes; 2, MacFarlane Bros.; 3, A. Gorham; 4, G. Holmes.
Special, best bushel wheat—1, D. Inness.
Best bushel oats—1, D. Inness.
Grain in the straw—1st, D. Inness.

Potatoes

Delaware—1, W. N. Sterritt; 2, W. H. Moore; 3, R. J. Shaw; 4, A. E. Kilburn City; 5, Charles McAdam; 6, McCullough Bros.
Iirsh Cobbler—1, Bebbington, J. and Sons; 2, W. H. Moore; 3, B. Goodspeed; 4, Charles McAdam; 5, A. E. Kilburn.
Carmen—1, W. N. Sterritt; 2, F. E. & H. G. Smith, Long Reach, N.B.
Gold Coin—1, F. E. & H. G. Smith; 2, John Edgar, Springhill; 3, C. Currie.
Any white variety—1, B. Goodspeed; 2, W. N. Sterritt; 3, F. E. Smith; 4, A. H. Jewett, City.
Any Rose variety—1, A. Keene, St. Marys; 2, B. Goodspeed; 3, A. Gorham; 4, R. J. Maryland.
Any red variety—1, W. N. Sterritt; 2, B. Goodspeed; 3, McCollough Bros.; 4, Charles McAdam.
Any dark skinned variety—1, B. Goodspeed; 2, A. Keene; 3, J. A. Johnston; 4, George McKay, Kingsclear.
Swedes—1, B. Goodspeed; 2, W. Illingsworth; 3, H. Dickson; 4, Mrs. E. W. Darcus.
Turnips—1, McCollough Bros.; 2, H. Dickson; 3, W. Illingworth; 4, C. Currie.
Mangels—1, B. Goodspeed; 2, J. W. Smith & Son; 3, W. Illingworth; 4, H. Dickson.
Sugar Mangels—1, B. Goodspeed; 2, J. W. Smith & Sons.
Red Carrots—1, W. N. Sterritt; 2, B. Goodspeed; 3, Mrs. E. W. Darcus; 4, George McKay.
White carrots—1, W. N. Sterritt; 2, B. Goodspeed; 3, J. Bebbington & Son; 4, George McKay.
Pumpkins—1, Thurston Clark; 2, Alex. Murray; 3, J. Babbington & Son.
Sheaf fodder corn—1, R. J. Shaw; 2, J. W. Smith & Son; 3, B. Goodspeed; 4, J. A. Johnston.
Collection Field Roots—1, B. Goodspeed; 2, W. Illingworth; 3, J. W. Smith & Sons.

Garden Vegetables

Brussels Sprouts—1, H. Dickson; 2, J. Babbington & Son.
Beets, long—1, J. Babbington & Son, 2, B. Goodspeed.
Beets, Egyptian—1, H. Dickson; 2, John Jewett, Fredericton; 3, Mrs. T. W. Smith.
Beets, Eclipse—1, Mrs. E. W. Darcus; 2, H. Dickson; 3, John Jewett
Beans, wax podded—1, David Sharp, Fredericton; 2, F. E. & H. G. Smith; 3, Alfred Keene.
Beans, green podded—1, A. R. Gorham; 2, J. Bebbington & Son; 3, John McKay.
Cauliflower—1, J. Bebbington & Son; 2, H. Dickson.
Cabbage, white—1, Mrs. T. W. Smith; 2, Charles Jewett, Fredericton; 3, H. Dickson.
Cabbage, red—1, Charles Jewett; 2, Mrs. Smith; 3, W. J. Smith & Sons.
Carrots, intermediate—1, J. W. Smith & Son; 2, J. McKay; 3, B. Goodspeed.
Carrots, oxheart—1, B. Goodspeed; 2, J. W. Smith & Sons; 3, W. N. Sterritt.
Carrot, early horn—1, B. Goodspeed; 2, W. N. Sterritt; 3, J. Bebbington & Son.
Celery, white—1, H. Dickson; 2, J. Bebbington & Son; 3, J. W. Smith & Sons.
Celery, white plume—1, J. W. Smith & Son; 2, Mrs. Darous! 3, J. Bebbington & Son.
Celery, red—1, J. Bebbington & Son; 2, H. Dickson; 3, Mrs. Darcus.
Corn, white howling mob—1, Mrs. E. W. Darcus; 2, A. Gorham.
Golden Bantam—1, W. Sterritt; 2, A. E. Kilburn; 3, John Jewett.
Sweet—1, W. N. Sterritt; 2, A. Gorham; 3, John Jewett.
Cucumbers, best variety—1, F. E. & H. G. Smith; 2, W. Sterritt; 3, H. Dickson.
Herbs, garden—1, J. W. Smith & Sons; 2, Willard Camp.
Melons, citron—1, B. Goodspeed; 2, W. Sterritt; 3, Alex Murray.
Melons, musk—1, W. Sterritt; 2, J. W. Smith & Sons; 3, J. Bebbington & Sons.
Onions, white—1, B. Goodspeed; 2, J. Johnston; 3, F. E. & H. G. Smith.
Onions, yellow—1, Herb MacDonald, Fredericton; 2, Mrs. Darcus; 3, A. Keene.
Onions, red—1, McFarlane Bros.; 2, J. Bebbington & Son; 3, Mrs. T. W. Smith.
Onions, white pickling—1, A. Gorham; 2, B. Goodspeed.
Onions, yellow pickling—1, B. Goodspeed; 2, A. Gorham; 3, J. Bebbington.
Onions, potato—1, James Scott, Fredericton; 2, J. W. Stevenson; 3, J. W. Smith & Son.
Onions, potato—1, Femar King; 2, Mrs. Darcus.
Parsnips, hollow crown—1, Charles Jewett; 2, B. Goodspeed; 3 ,Hugh Dickson.
Peas, garden—1, Mrs. Darcus; 2, David Roberts, Fredericton; 3, Alex. Murray.
Radishes—1, J. Bebbington & Sons; 2, H. Dickson; 3, Mrs. Darcus.
Savoys—1, H. Dickson; 2, J. Bebbington & Son.
Squash, Boston Marrow—1, B. Goodspeed; 2, Alex. Murray; 3, George Pugh.
Squash, Hubbard—1, J. W. Smith & Sons; 2, John Bolster, Fredericton; 3, H. Dickson.

(Continued on Page 24)

The Chatham Exhibition

The seventh Biennial Exhibition conducted by the Miramichi Agricultural Exhibition Association was held in the town of Chatham on September 28th to October 1st inclusive.

Mr. Geo. E. Fisher, the efficient, genial manager of the fair, quite early in the season, made the following announcement to the public, through the columns of the official prize lists.

"Have you marked September 27th "to October 1st on your calendar? That "is the time of the Miramichi Agricultural Exhibition and the management, "in extending to you a hearty invita "tion to attend this, their seventh ex- "hibition, are pleased to assure you "that preparations are being made for "the finest show ever held by this "association.

"Visitors to former Exhibitions have "been surprised and delighted at the "magnificent showing of the Farm and "Garden Products, while the exhibit "of Live Stock has equalled, if it has "not surpassed that shown in any part "of the Maritime Provinces. We ex- "pect that the showing of this year "will be equal to, if not better than "any former show. The Industrial Ex- "hibit will also challenge the admira- "tion of all attendants. Special pre- "parations are being made, and with "larger Prize List than ever before, "we are assured that the showing in "these Departments will excel that of "previous Exhibitions."

Visitors to the fair found everything up to the standard predicted in the announcement. The main building was well filled with industrial exhibits. The vegetables and grain shown was the best and most artistically staged in the Maritime Provinces this year. Considering the short time since the grain harvest, the exhibit of grain threshed and in the straw was most creditable. The vegetable display was the best we have seen for a long time. Practically every vegetable grown in a northern clime was staged. Mr. Fisher showed onions 18 inches in circumference and weighing over the three pound mark. This was no freak, he had a large number of them, all grown from seed this season. The educational display staged by the Fredericton Experimental Station under the direction of Mr. Hubbard, was well patronized by the public. The young men in charge were kept busy explaining the various models of farm buildings, equipment, etc., and undoubtedly some of the ideas will be gradually put into parctice by the farmers of the North Shore.

The display of fancy work, fien arts, and household science was second to none of the respective works shown at the other fall fairs.

The Horticultural display was quite creditable but very little of it was grown on the North Shore. The St. John River Valley and Nova Scotia contributed the major portion of the apples.

Geo. H. Barr, Ottawa, judged the dairy products exhibit. He remarked that Chatham had the best display and best quality of home made butter he had judged anywhere in Canada this year. This speaks well for the careful handling of milk, cream and butter in the farm homes of northern New Brunswick. Mr. C. W. McDougall, Dairy Superintendent, conducted a demonstration on butter and cheese making which attracted considerable attention. Mrs. Benj. Lester, Apohaqui, N.B., demonstrated the work and when the cream cheese was ready to serve there was no trouble to get official tasters. We called around for our share and were it not for our extreme modesty we would have come back for a second helping—it certainly tasted like "more." Mrs. Lester is a product of the Sussex Dairy School and holds the enviable reputation of being one of the most skilful dairy butter makers in the province.

The stalls and pens of the live stock paddocks were well filled with a strong showing of horses, cattle, sheep and swine. There was also a good showing of poultry.

With a prize list open to all Canada the Chatham Exhibition attracted the best herds of Prince Edward Island Nova Scotia, New Brunswick and several herds from the Province of Quebec.

An innovation much appreciated by the exhibitors was the awarding of neat bronze medals, the crest of the Mirimichi Agricultural Exhibition Association, instead of the usual diploma ribbons and cards.

The Judges

Light Horses—John Vipond, Brooklin, Ont; Light Horses—Dr. J. A. Sinclair, N.S.A.C., Truro, N.S.; Beef Cattle—L. O. Clifford, Ontario; Dairy Cattle,—R. M. Holtby, Ontario; Dairy Grades—H. W. Corning, M.P.P., Yarmouth, N.S.; Sheep—Walter Milne, Ontario; Swine—J. B. Ferguson, Ontario; Poultry,—Seth Jones; Dairy Proucts—Geo. H. Barr.

The champion Clydesdale stallion was Kelvin's Pride, the promising yearling that snatched this coveted honor at Fredericton from the erstwhile champions, Baron's Own and Baron Squire.

Shorthorns—Fred Cromwell, of Quebec, showed the champion Shorthorn bull. R. A. Snowball, who captured eight prizes on their Shorthorns, including the medal for best Shorthorn female, any age on his aged cow, Mina Snowball, and the medal for best bull and three of his get on his Gay Archer. J. M. Laird & Son, Kelvin Grove, P.E.I. had five first, two second, one third and two fourth prizes, including medal for best Shorthorn cow and two of her progeny on Chatham Belle, to their credit. Harold Baldwin captured one first and A. G. Dickson one second prize.

Devons—W. A. Pinkney, Melbourne, N.S., had the only entries in the Devon class and was awarded all the prizes for which he had entries.

Herefords—Wm. O'Brien & Sons and Jas. E. O'Brien, Windsor Forks, N.S., were out with two well fitted herds of white faces. Honors were pretty evenly divided.

Polled Angus—All the sections of this class were well filled, J. M. Laird & Son, of Prince Edward Island, and A. G. Spafford, Compton, Que., were the competitors. Fourteen firsts, six seconds and four thirds, including the four medals went to the Prince Edward Island herd. The remainder went to Spafford

Ayrshires—McIntyre Bros., Sussex, N.B., and A. McRae & Sons, Charlottetown, were out with two splendid herds. Included in McIntyre Bros. winnings were medals for best male on their Morton Mains, Amanth, for bsst cow and two of her progeny, on their Morton Maain's Lady Nelly. In all they had ten first prizes, six second prizes, six third prizes and two fourth prizes. A. McRae & Sons captured the medal for the best bull and three of his get on their Hobsland's Tumphies' Heir, and twelve first prizes, nine second prizes and one third prize. G. G. Stothart, Newcastle, captured one second and one fourth prize and Keating Bros. captured one third prize.

Jerseys—The competition in Jerseys was just the same as at Fredericton. H. S. Pipes & Son, Amherst, N. S.; Cann Bros., Yarmouth, N.S., and Edwards & Alexander, Hillhurst, Que., were out with their best. The male championship medal and the medal for best bull and three of his get went to Cann Bros.' Figgis Fox's Gen Fox. The female championship medal winner was Edwards & Alexander's Gentle Fern of Glen View. Gentle Fern also captured the medal with two of her progeny. Cann Bros. captured 7 firsts, 4 seconds, 5 thirds and 3 fourths. H. S. Pipes & Son, 4 firsts, 8 seconds, 3 thirds, 7 fourths, and Edwards & Alexander 11 firsts, 6 seconds and 6 thirds.

Guernseys—There were three good Guernsey herds represented at Chatham. H. W. Corning, M.P.P., Chegoggin, N.S.; Roper Bros., Charlottetown, P.E.I., and Hugh A. Dickson, Central Onslow, N.S. Corning captured all the medals. Island Prince, of Hillside, was the champion male and was also first with three of his get. The champion female was Dairymaid of Hillside and Emma's Image Rose of Hillside, was first with two of her progeny. Twelve first, five seconds, four thirds and one-fourth prizes went to the Corning herd. Dickson captured two firsts, seven seconds, five thirds and three fourth prizes, and Roper Bros. had seven firsts, five seconds, five thirds and one fourth prize to their credit.

Holsteins—Harding Bros., Welsford, N.B., were the big winners in the Holstein class. R. L. Hicks, of Dalhousie Junction, was in hand with a nice little herd which captured 4 firsts, 4 seconds and 3 third prizes, including the medal for the best female, any age, on his Eloise De Kol Netherland, shown in the aged dry cow class. The championship male was Harding Bros.' Percellas Schuling Posch, a senior calf, out of Percella Ina Abbekirk, by Schuling Sir Posch, Hotel Dieu Farm, Chatham, had one fourth prize to its credit.

Canadians—John Hooper and Hooper Bros., Compton, Que., showed two herds of thrifty Canadian cattle. The Hooper boys, who are brothers of Mr. Thomas Hooper, the popular horseman at the N. S. A. C. are heartily welcomed to the Maritime Province show rings.

Dairy Grades were a good useful lot

Sheep

Cotswolds—All prizes to Chas. Symes, N.S.

Leicesters—The Boswalls of Prince Edward Island were on hand with two nice flocks of Leicesters.

Lincolns—Were shown by the Boswalls and also by C. D. Pugsley, River Herbert, N.S. The Boswalls captured 6 firsts, 4 seconds and 4 third prizes. Pugsley had 2 firsts, 4 seconds and 3 third prizes to his credit.

Oxfords—J. E. Baker & Sons, of Barronsfield, N.S., and J. M. Laird & Son, Kelvin Grove, P.E.I., were the competitors in the Oxford Down class. The majority of the first prizes went to the Nova Scotia flock. The Prince Edward Island flock won one first, three second and three third prizes.

Shropshires—A. G. Spafford, Compton, Que., and the Boswalls, of Prince Edward Island, divided the honors in the Shropshire class, the lion's share going to the Boswalls.

South Downs—Two nice flocks of the big little South Downs were at Chatham. J. E. Baker & Sons won 5 firsts, 5 seconds and 2 thirds and the remainder of the prizes went to Elijah Saunders, Winsloe, P.E.I.

Hampshires—Cephas Nunn, of Winsloe, P.E.I., captured the greater number of prizes in the Hampshire class, the Boswalls, his only competitors, captured one first, two second and three third prizes.

PRIZE LIST

HORSES

Thoroughbreds

George M. Holmes, Amherst, took all the awards in this class.

Hackneys

Stallion, 3 years—R. A. Snowball, 1; Dr. W. B. Jones.

Stallion, 1 year—W. M. Johnston, 1.

Filly, 2 years—R. A. Snowball, 1; Geo. M. Holmes, 2.

Filly, 1 year—R. A. Snowball, 1; W. M. Johnston, 2.

Foal of 1915—W. M. Johnston, 1; Maher Bros., 2.

Brood mare with foal—W. M. Johnston, 1; Maher Bros., 2.

Special prize donated by Canadian Hackney Horse Society for best stallion any age or height.—R. A. Snowball, 1. Best mare, any age or height, W. M. Johnston, 1.

Special prize donated by R. A. Snowball for progeny of horses at Meadow Brook Farm—Best filly or gelding, 2 years or over; sired by Baron Balgreggan—Robert McEwen, 1.

Filly or gelding, 1 year or under, sired by Baron Balgreggan or Baron's Own—Wm. M. Morrison, 1.

Standard Bred.

Stallion, 3 years old and upwards—Hammond Kelly, 1; Edward Dalton, 2; McFarlane Bros. 3.

Filly, 3 years and upwards—Geo. M. Holmes, 1.

Filly, 2 years old—Geo. M. Holmes, 1.

Foal of 1915.—R. Cox, 1.

Brood mare with foal by her side—R. Cox, 1.

Stallion, any age—McFarlane Bros., 1.

Mare, any age—Geo. M. Holmes, 1.

Coach Horses

Stallion, 2 years old and filly, 3 years old and upwards.—A. & R. Loggie, 1.

Clydesdales.

Stallion, 4 years and upwards—R. A. Snowball, 1; McFarlane Bros. 2.

Stallion, 3 years old—McFarlane Bros., 1; A. T. Hinton, 2.

Stallion—2 years old—McFarlane Bros., 1; A. T. Hinton, 2.

Stallion, 2 years—R. A. Snowball, 1; R. O'Leary, 2.

Stallion, 1 year old—R. A. Snowball, 1.

Filly, 3 years old and upwards—R. A. Snowball, 1; McFarlane Bros., 2, 3.

Filly, 1 year old—McFarlane Bros., 1, 2; H. S. Pipes & Sons, 3.

Foal of 1915—Wm. Morrison, 1; McFarlane Bros., 2.

Brood mare with foal—McFarlane Bros., 1; Wm. Morrison, 2.

Stallion, any age—R. A. Snowball, 1.

Mare, any age—R. A. Snowball, 1.

Stallion and three of his get—R. A. Snowball, 1.

Clydesdale stallion, any age—R. A. Snowball, 1.

Clydesdale mare, any age—R. A. Snowball, 1.

Best filly or gelding sired by Clydesdale stallion—R. A. Snowball, 1; McFarlane Bros., 2, 3.

Filly or gelding, 2 years, sired by Model Performer—W. B. Snowball, 1.

Filly or gelding, sired by Model Performer, 1 year—Donald Watling, 1.

Percheron

Stallion, 4 years and upwards and stallion with 3 of his get—A. T. Hinton, 1.

Saddle Horses

Ridden by gentleman, Hammond Kelly, 1; Geo. W. Holmes, 2; Geo. J. Dickson.

Ridden by lady—Beverly Jardine, 1.

Carriage Horses to Talter

Brood mare, with foal—Geo. W. Holmes, 1; James W. Flannagan, 2.

Filly or gelding, 3 years old.—A. & R. Loggie, 1; Roger Flanagan, 2.

Filly or gelding, 2 years old—Patrick Martin, 1; James W. Flanagan, 2; Ellis Stothart, 3.

Yearling filly or gelding—Geo. M. Holmes, 1; Keating Bros., 2.

Foal of 1915—Geo. M. Holmes, 1; Donald Watling, 2; James W. Flanagan, 3.

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Filly or gelding, 2 years old—Geo. M. Holmes 1.

Pair matched carriage horses—W. B. Snowball, 1; R. A. Snowball, 2; Geo. M. Holmes, 3.

Single horse, 15½ hands and over—John McKeen, 1; L. G. Babineau, 2.

Mare and 3 of her progeny—James W. Flanagan, 1.

Best horse, any age—W. B. Snowball, 1.

Mare or gelding, driven by lady——as. D. Johnston, 1; A. T. Hinton, 2; Harold Baldwin, 3.

Light Draught

Mare or gelding, 4 years old and upwards—W. S. Loggie Co., 1; Creighton Bros., 2; Roger Flanagan, 3.

Mare or gelding, 3 years old—Robt. McEwen, 1.

Filly or gelding, 2 years old—G. G. Stothart, 1; P. S. Bremner, 2; Geo. E. Fisher, 3.

Filly or gelding, 1 year—John Moody, 1; 1, A. T. Hinton, 2; Henry Scott, 3.

Brood mare, with foal—George M. Holmes, 1; Hotel Dieu Farm, 2; W. S. Loggie Co., 3.

Foal of 1915.—Geo. M. Holmes, 1; A. G. Dickson, 2; Harold S. Stothart, 3.

Matched Team—W. S. Loggie Co., 1.

Heavy Draught

Mare or gelding, 4 years and upwards—R. A. Snowball, 1; James Blakeley, 2; L. Reinsborrow, 3.

Mare or gelding, 3 years old.—R. A. Snowball, 1.

Brood mare with foal.—Fred Gray, 1 and 2.

Foal of 1915—Fred Gray, 1, 2.

Matched team—R. A. Snowball, 1; Geo. E. Fisher, 2.

Ponies

Mare or gelding—R. A. Snowball, 1.

Truckmen's Competition

Mare or gelding, hitched to sloven—Isaac Copping, 1.

SWINE

Berkshires

Boar, over 1 year—Traer Bros., 1.

Boar, over 6 months—A. C. Servant, Overton, N. S., 1.

Boar, over 3 months—A. C. Servant, 1; Beverly Jardine 2.

Sow, over 2 years—A. C. Servant 1.

Sow, over 1 year—Beverly Jardine 1.

Sow, over 6 months—A. C. Servant, 1.

Sow, over 3 months, A. C. Servant, 1; Keating Bros., 2; Beverly Jardine, 3.

Herd, boar and 3 females, any age—A. C. Servant, 1.

Improved Yorkshires

Boar, over 1 year—Geo. Staples, Newcastle, 1; Geo. E. Fisher, 2; A. G. Dickson, 3.

Boar, over 6 months—Bliss Dickson, 1.

Boar, over 3 months.—Hotel Dieu, Farm, 1; Geo. E. Fisher, 2.

Sow, over 2 years—Geo. E. Fisher, 1; A. G. Dickson, 2, 3.

Sow, over 1 year—A. G. Dickson, 1; Geo. E. Fisher, 2; Henry White, 3.

Sow, over 6 months—Hotel Dieu Farm—1, Geo. E. Fisher, 2; A. G. Dickson, 3.

Sow, over 3 months—Hotel Dieu Farm, 1; Keating Bros., 2; Roger Flanagan, 3.

Breeding sow, with litter—Hotel Dieu Farm, 1; A. G. Dickson, 2; Geo. E. Fisher, 3.

Herd, any age—Geo. E. Fisher, 1; A. G. Dickson, 2.

White Chester

All prizes to H. W. Corning.

Poland China

Boar, over 2 years—A. C. Servant, 1.

Boar, over 1 year—Wm. H. Baldwin, 1.

Sow, over 2 years—A. C. Servant, 1.

Sow, over 3 months—Wm. H. Baldwin, 1.

Duroc Jerseys

All prizes to J. E. Baker & Sons.

Fat Pigs

Fat hog, largest and fattest—Hotel Dieu Farm, 1.

Spring pig—Roger Flanagan, 1, 2, 5; Henry Gordon, 3; Geo. J. Dickson, 4.

Grades

Sow, over 2 years.—A. & R. Loggie, 1; Geo. E. Fisher, 2.

Sow, over 1 year.—Creighton Bros., 1; Donald Watling, 2.

Sow, under 6 months.—Geo. J. Dickson, 1; Henry Gordon, 2; Creighton Bros., 3.

Breeding sow, under 3 months.—Geo. J. Dickson, 1; Louis Dick, 2; A. & R. Loggie, 3.

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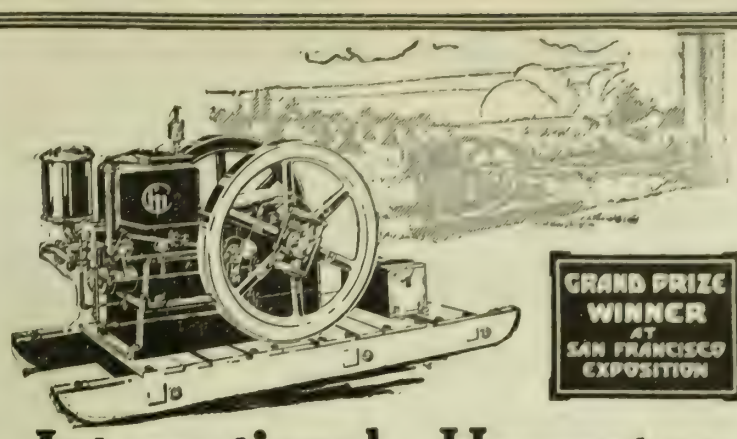
P. M.: There are several easy ways to prevent the rusting of ploughs and cultivators and to keep the teeth bright. One is to give them a coat of thick limewash as soon as they are brought in from the field. Another way is to dissolve 1 oz. of resin in 4 oz. of linseed oil, and while hot mix this with a quart of kerosene, and stir well. This is laid on the smooth iron with a paint brush. Another way is to dissolve 1 oz. of camphor in some turpentine, and add t this 4 oz. of lard and 1 oz. of pulverized black lead or stove polish, and mix well. This may be rubbed on with a rag. To remove rust from plows or tools, nothing is better than a mixture of half a pint of oil of vitriol poured slowly into a quart of water and apply this to the rusted metal. Wash out with water.



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Bloody Milk.

I have a seven-year-old cow that gives bloody milk. She recently gave birth to a calf. What is the cause and what treatment do you advise?—M. McKenzie, Cape Breton.

Bloody milk is caused either by an injury to the udder or to a weakness of the udder blood vessels. It is usually seen in new milkers, especially heifers. Bathe the udder once a day with warm water and rub in a little camphorated oil.

Will Pump 1000 Gallons of Water an Hour

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And pumping is but one of many labor-saving jobs that can be done on any farm with a

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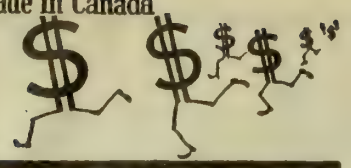


Better Butter and better prices come with Windsor Dairy Salt.

162

DAIRYING.

Value of Scales and Babcock Test.

One time a friend asked me how many cows I had and I told him 18. He asked me what kind they were and I told him 18 kinds, but all giving milk. I had selected those cows with considerable care. I had paid attention to the five essential points that should always be borne in mind in selecting dairy cows but somehow or other the living I made was lean. I figured out the ration so fine that it seemed as if I were doing a big part of the work that nature had actually intended those cows to do, and yet the living I got was not high. Finally I got a milk scale and hung it up in the barn. I placed a piece of paper on a board near by and I told the boys that from then on we would keep a tally on the cows. We started in weighing every cow's milk every morning to see what it would tell. It was only a short time before I became so interested in that tally that I told the boys to weigh the milk from each cow every night and put that weight on the tally too.

I figured out before starting that to keep a cow for a year would equal an amount equivalent to the value of 6,000 pounds of milk. A year rolled around and I recapitulated. After all I had done for some of those cows they had me headed for the poor-house. It was like this: Expenses: 6,000 pounds of milk; returns, 4,000 pounds of milk; result, poorhouse.

I said that hereafter in the herd 6,000 pounds of milk as a year's yield would be our deadline. In culling the old herd we sold some to the butcher and some to the bologna man, and there were one or two that I could not get rid of at all. But I had to get rid of those cows; they were putting me in the hole every day. I do not expect a young heifer with her first calf to give enough milk to place her up in the tally with mature cows. The heifer is growing and in her growth we realize a profit, so that if she gives 4,500 to 5,00 pounds of milk, she is doing very well and we are satisfied.

We had placed our herd above the deadline, but I saw a probability that some of those cows which were hovering between life and death on the deadline were giving milk of a quality that would entitle them to a greater consideration and I began to wonder about some way in which we could carry our investigations further. I got some tumblers made of clear glass, and took a sample of the milk of each cow. I put my samples in the tumblers, marking each tumbler, and after they had stood a few hours, I began to watch the cream on them. I found on some of the samples just a little bit of cream and on others twice as much, and on others so much that it surprised me. Then when I examined further I thought there was a difference even in the density of the cream and I wanted more light. At a dairy supply house I found a little box marked, "Babcock test, Four Bottles," and I took it home. We tested our herd all through. I received a great light when I began to use the scales, but when I began to use a Babcock tester, I commenced to receive revelations in the dairy business.

There was Old Biddy giving 64 pounds of milk a day and old Mimie 54 pounds, that had me headed right for jail, and I thought they were keeping me out of the poorhouse. Biddy's milk tested 3.4 per cent and Mimie's 2.6 per cent butterfat and the law in my town demanded a test of 3.2 per cent butterfat, or fine or imprisonment or both.

The only reason in the world that I am called a successful dairyman now is that I have kept out of the poor-house and never been in jail, a pretty good record for a fellow who has been in the milk business over 15 years. If any one is following that same road I did he should get to work forthwith and use the scales an dtest. Quit guessing, get down to facts. Weigh the milk and test the cows.—Ben. R. Eldridge in Breeders' Gazette.

Court Manners in the Cow Barn.

Speak kindly to the gentle cow, and never, never tease her;
Take off your hat; politely bow; do all you can to please her.
Be sure your hands have been washed clean; be sure your nails are curried:
More milk is drawn from cows serene than from the cow that's worried.
—Mother Goose's Modern Maxims for Milkers.

"Kicking the cow has not been good form for some time in even moderate ly advanced dairy circles," says the Chicago Herald, "though the ban upon it probably originated more in practical than humane considerations. Painful experience warranted the conclusion that the cow thus approached was far more likely to kick the milker through the side of the barn.

"Of late years, the cow-barn code of manners and morals, has developed rapidly from the negative to the positive style—from 'thou shalt nots' to 'thou shalts.' It has been discovered that the cow, long the poet's livestock emblem of placidity, has nerves, and should be soothed and not censured when she is disinclined to 'give down' her lacteal bounty.

"Not only pitchforks, milking stools, single-trees and fence stakes have fallen into disrepute as cow persuaders; bad language is also under ban. The cow physiologists and psychologists of the agricultural colleges seem to have conclusively demonstrated that the cow addressed in profane or even harsh language, gives less milk for the same amount of feed.

"Even the tone of voice is said to make a difference. The ears of the cow, though less mobile than the mules, are still sensitive. They are irritated by strident squeals and rough gutterals. The milker, who is gifted by nature, or has acquired the art, the low, sweet, soothing 'drawing room' tone of cultured society, is averred to find his reward in an increased yield of milk.

"Thus it has come to pass that the up-to-date code of cow-barn manners includes many things not dreamed in the cow philosophy of our grandfathers. Not only must the milker's hands be clean, but the nails should be manicured, that they may not scratch or tickle. From the most up-to-date dairies the currycomb has been banished as the instrument of the cow's matutinal massage. Its place has been taken by the vacuum cleaner.

"These statements are not humorous exagerations. They are derived from most serious monographs issued from scientific experiment stations and from the rules laid down for employees by enterprising dairymen. A current news item records that a New Jersey dairyman has now provided a professional manicure to see that the milkers' nails are in order before they begin to milk.

"In logical development of these advanced ideas we shall doubtless hear next that it is no longer in order to recite on entering the cow barn the old nursery rhyme:

"Come, pretty cow, let down your milk, and I will give you a gown of silk."

"These are realistic as well as scientific days in the dairy, and the cow should accordingly be promised something she could both use and enjoy. Perhaps this might be substituted:

" 'Come, pretty cow, I need the cash; for milk I'll give you a warm bran mash.'

"Then, while milking, the milker might recite soothing selections from the poets in praise of the cow. The Vedic Hymns contain a large number of such poems. They are commended to the attention of the the modern bucolic muse as sources of inspiration. Then, when the operation is concluded the milker might recite Ann Taylor's lines:

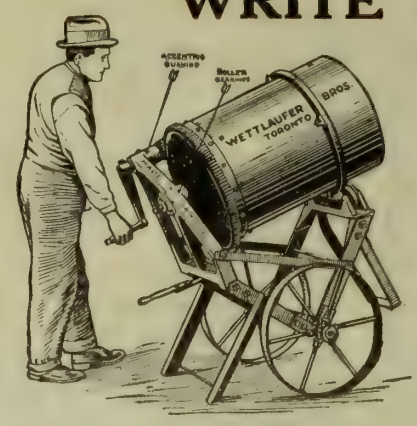
"Thank you, pretty cow, that made pleasant milk to soak my bread,' etc.

"However, anyone who has ever tried it must remain skeptical of the possibility of teaching a calf to drink without using language that would not be admitted to a family newspaper. That's a task like driving mules."

Turnip Taste in Butter.

Those German investigators Weigmann and Wolff, have recently published results of observations in connection with the smell and taste of swede turnips in butter and milk. Most of us have been of the impression that the turnip smell was something of the nature of an odor which went right through a cow and emerged in the milk in a concentrated form. Just

WRITE FOR OUR SPECIAL OFFER



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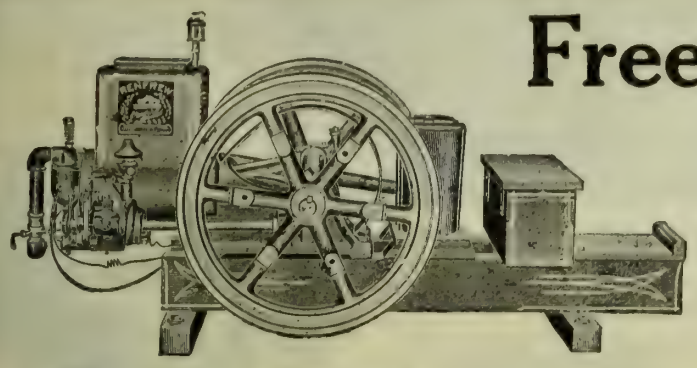
Mr. Colin M. Kiel, Craighurst, Simcoe county, Ontario, writes: "My mother and I have both used Dr. Chase's Kidney-Liver Pills with great satisfaction. We find that there is nothing to equal them as a prompt cure for torpid liver, biliousness and indigestion. Some years ago my mother came near to death from kidney trouble and has to be careful in preventing Bright's disease. By using Dr. Chase's Kidney-Liver Pills occasionally she keeps the kidneys healthy and active. Another point favorable to Dr. Chase's Kidney-Liver Pills is that they do not gripe and yet accomplish good results. You are at liberty to use my letter."

This statement is endorsed by Mr. Marmaduke Caston, Justice of the Peace, who writes: "This is to certify that I am personally acquainted with Mr. Colin M. Keil and believe his statement regarding Dr. Chase's Kidney-Liver Pills to be true and correct."

If you are interested in this case, write to Mr. Keil, enclosing stamp for reply, and he will verify his statement. We like to have people to do this, for we are very careful to only use statements from responsible persons.

Should this case not be similar to yours, write to us for the statement of some one whose trouble was along the same lines. We have thousands of letters to choose from. Or better still, put the Kidney-Liver Pills to the test right away. They will only cost you a quarter and a box lasts for some time.

As a means of awakening the action of liver, kidneys and bowels and thereby curing biliousness, indigestion, backache and kidney troubles, Dr. Chase's Kidney-Liver Pills hold a unique position. By their combined action on these eliminating organs they prove effective in complicated ailments which defy ordinary treatment. One pill a dose, 25 cents a box, all dealers, or Edmanson, Bates & Company, Limited, Toronto.



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Some makes of engines offered for sale have high tension magneto but no batteries. Others have batteries but no magneto. Now, if anything happens to either ignition system, it means that the engine is stuck and the work held up.

The ideal equipment is the dual ignition system of the Renfrew Standard gasoline engine. It has high tension magneto and the batteries, too. It thus has two separate and complete ignition systems, on either of which you can operate the engine. This reduces the possibility of a tie up to a minimum, and makes the engine one you can bank on for rendering efficient and satisfactory service all the time.

Lever type friction clutch pulley of the best grade supplied without charge with every engine of 6 h.p. and over.

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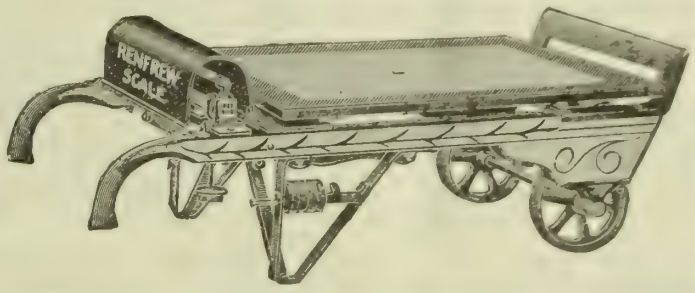
Standard Skims to .01 percent

The Standard Cream Separator skims so close, so very close, that the Babcock tester shows that only one-tenth of a pound of butter fat is lost in one thousand pounds of milk skimmed. Think of it! Only one-tenth of a pound! Merely 2½ cents worth of butter fat lost in every 1,000 lbs. of milk skimmed. And with all this economy in skimming you get the easy turning, the conveniently low supply can, the self oiling system, for all of which the Standard is noted.

You need this close skimmer in your dairy.

Renfrew Truck Scale

Wheels around like a truck. Weighs anything from 1 lb. to 2,000 lbs., cattle included. Soon pays for itself. No farm should be without one. Government inspected. Absolutely accurate.



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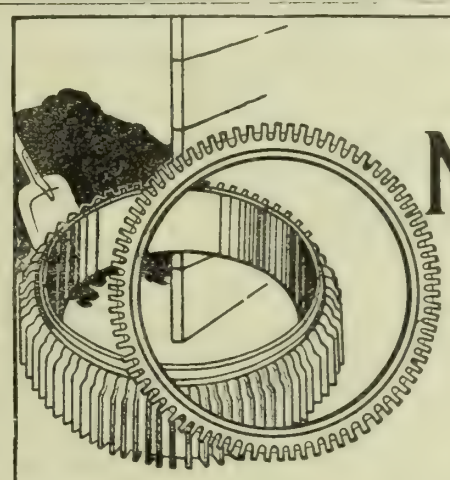
how such an intangible thing as an odor got through a cow, and particularly through the transformation of turnips to milk we have not been able to explain. However, here is what the investigators says:

The taste of swedes in butter is attributed for the most part to bacterial action and only for the very least part to a somewhat stronger smell and taste of the cow than is found in ordinary milk. We further recognize that the bacteria which cause this secondary flavor are not new and special ones, but those which are generally found in milk, especially bacterium coli, lactic acid bacteria, Actinomyces oderifer, besides some mycelia rarely found in milk.

It is further stated that the swede flavor was due to strains of B. coli together with other species, among which is to be mentioned Bacterium fluorescens liquefaciens, which possesses to a greater degree the power of producing the taste of swedes and carrots in milk. The observations on the latter taste were made on the occasion of investigating a milk which was designated as "bitter" and subject to "premature curdling," in which this bacterium was prevalent together with members of the coli-aerogenes group, short alkaline bacilla and cocci. The glass plates on which the milk was laid smelt distinctly and strongly of carrots, and the milk inoculated with the isolated bacteria took after 24 hours the same strong taste and smell.

The taste of swedes caused by Bacterium fluorescens liquefaciens is exceedingly acute an dstrong, and could be studied in a number of cases. On several occasions, when the above bacterium was present, instead of the swede taste a fine pineapple or strawberry flavor could be detected. In other instances the Bacterium fluorescens did not produce the swede taste when alone but only in the presence of other bacteria, especially of lactic and acid bacteria. The latter alone may even be the cause of the deefctive taste of the milk, from which it follows that they also are capable of giving the swede taste to butter. This is perhaps rather more of a taste of "fodder," which becomes stronger and more distinctly swede-like as soon as other bacteria or fungi possessing similar properties are present.



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WOULD HAVE TO STAY IN BED.

Milburn's Heart and Nerve Pills Cured Her.

Mrs. J. Day, 234 John St. South, Hamilton, Ont., writes: "I was so run down with a weak heart that I could not even sweep the floor, nor could I sleep at night. I was so awfully sick sometimes I had to stay in bed all day as I was so weak. I used three and a half boxes of Milburn's Heart and Nerve Pills, and I am a cured woman to-day, and as strong as any one could be, and am doing my own housework, even my own washing.

"I doctored for over two years, but got no help until I used your pills."

Milburn's Heart and Nerve Pills are 50c per box, 3 boxes for $1.25, at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

The Charlottetown Exhibition.

(Continued from Page 6)

Cow in milk or calf, 2 years old—1, J. W. Callbeck & Son; 2, J. M. Leard & Son; 3, H A. Sanderson, North River.

Heifer, 1 year old—1 and 3, J. M. Leard & Son; 2, J. W. Callbeck & Sons.

Heifer calf, under 1 year old and over 6 months—1, J. M. Leard & Son; 2, Cass Bros.

Heifer calf, under 6 months and over 3 months—1, J. M. Callbeck & Sons; 2, H. A. Sanderson

Champion bull shown in class—1, J. M. Leard & Son.

Champion female shown in class—1. J. W. Callbeck & Sons.

Herd, consisting of 1 bull and 4 females over 2 years old and owned by exhibitor—1, J. M. Leard & Son.

Cow and 2 of her offspring—1, J. M. Leard & Son; 2, H. A. Sanderson.

CLASS 17.—Herefords

Bull, 1 year old—1, G. L. Hayden, Cherry Valley.

Cow, in milk or calf, 3 years old and upwards—1, G. L. Hayden.

Cow in milk or calf, 4 years old—1, G. L. Hayden.

Heifer calf, under 1 year and over 6 months—1, G. L. Hayden.

Heifer calf, under 6 months and over three months—1, G. L. Hayden.

CLASS 18.—Aberdeen or Polled Angus

Bull, 3 years old and upwards—1, J. M. Leard and Son.

Bull calf, under 6 months and over three months—1, J. M. Leard & Son.

Cow, in milk or calf, three years old and upwards—1, J. M. Leard & Son; 2, J. M. Leard & Son.

Cow in milk or calf, 3 years old—1 and 2, J. M. Leard & Son.

Cow in milk or calf, 2 years old—1 and 2, J. M. Leard & Son.

Heifer, 1 year old—1, Jos. Praught, Powanl.

Heifer calf, under 6 months and over three months—1, J. M. Leard & Son.

Herd, consisting of 1 bull and 4 females, over two years and owned by exhibitor—1, J. M. Leard & Son.

CLASS 19—Ayrshires

Bull, 1 year old—1, Calvin W. Wood, 2, McRae & Sons, Charlottetown.

Bull, 2 years old—1, H. A. Robertson, Alexandra.

Bull, 1 year old—1, C. W. Wood, Southport; 2, Robt. Stewart, Winsloe Station.

Bull calf, under one year and over six months—1 and 2, A. McRae & Sons; 3, C. Tupper Ferguson, Marshfield.

Bull calf, under six months and over three months—1, A. McRae & Sons; 2, Robert Stewart, Winsloe Station.

Cow in milk or calf, three years old and upwards—1, 2 and 3, A. McRae & Sons; 4, C. Tupper Ferguson.

Cow in milk or calf, 2 years old—1, and 2, A. McRae & Sons; 3, C. Tupper Ferguson.

Heifer, one year old—1, A. McRae & Sons; 2, Robert Stewart; 3, A. McRae & Sons; 4, C. Tupper Ferguson.

Heifer calf, under 1 year and over six months—1 and 2, A. McRae & Sons; 3, Robert Stewart.

Heifer calf, under 6 months and over three months—1, A. McRae & Sons; 2, Calvin W. Wood, Southport.

Herd, consisting of 1 bull and 4 females, over two years and owned by exhibitor—1, A. McRae & Sons.

Breeders young herd to consist of one bull and 4 females under two years of age; bull to be owned and female both owned and bred by exhibitor—1, A. McRae & Sons.

Champion bull, shown in class—1, A. McRae & Sons.

Special Prizes offered by the Canadian Ayrshire Breeders Association.

The best four animals, either sex, any age, the get of one sire to be bred and owned by exhibitor—A. McRae & Sons; 2, A. McRae & Sons.

The animals competing for these special prizes must be registered in the Canadian Ayrshire Herd Book.

RESULTS OF MILK TESTS, 1915.

Pure Bred Cow—1 and 2, Andrew McRae & Son, Charlottetown; 3 and 4, Lea & Clark, Victoria.

Pure Bred Heifer—1, McRae & Son, Charlottetown; 2, Lea & Clark, Victoria.

Grade cow—1, H. A. Robertson, Alexander; 2, A. McRae & Son, Charlottetown.

Holstein-Friesian Special—Section 1 Pure Bred cow; 1 and 2, Lea & Clark, Victoria.

Cow two years old,—1 and 2, Lea & Clark, Victoria.

CLASS 20—Jerseys

Bull, 3 years old and upwards.—1, Hamilton Horne, Milton; 2, W. Clark & Son, Wiltshire.

Bull, 2 years old—1, Wallace Stead, Springfield.

Bull, 1 year old—1, Byrne Bros. North River.

Bull calf, under one year and over six months—1, A. A. McBeth, Marshfield; 2, Hamilton Horne, Milton.

Bull calf, under six months and over three months—1, W. Clark & Sons.

Cow in milk or calf, three years old and upwards—1 and 3, W. Clarke & Sons; 2, Wallace Stead.

Cow in milk or calf, 2 years old—1, and 3, W. Clarke & Sons; 2, Hamilton Horne.

Heifers, 1 year old—1 and 2, W. Clark & Sons; 3 and 4, Hamilton Horne

Heifer calf, under 1 year and over six months—1, W. Clarke & Sons; 2, Hamilton Horne.

Heifer calf, under 6 months and over three months—1, Wallace Stead, Highfield; 2, Hamilton Horne; 3, W. Clark & Sons.

Herd, consisting of 1 bull and 4 females over 2 years old and owned by exhibitor—1, W. Clarke & Sons; 2, Wallace Stead; 3, Hamilton Horne.

Breeders young herd to consist of one bull and 4 females under two years of age; bull to be owned and female both owned and bred by exhibitor—1, W. Clarke & Sons.

Champion bull, any age—1, Hamilton Horne.

Champion female, any age—1, W. Clarke & Sons.

CLASS 21—Guernseys

Bull, 2 years old—1, Roper Bros., Charlottetown Royalty; 2, Frank H. Roper, Charlottetown Royalty.

Bull, 1 year old—1, Roper Bros.; 2, Frank H. Roper.

Bull calf, under 1 year old and over 6 months—1, Frank Roper; 2, Roper Bros.

Bull calf, under 6 months and over 3 months—1, Frank H. Roper; 2, Roper Bros.

Cow in milk or calf, 3 years old and upwards—1, Frank H. Roper; 2, Roper Bros.; 3, Frank H. Roper.

Cow in milk or calf, 2 years old—1 and 3, Roper Bros.; 2, Frank H. Roper.

Heifer, 1 year old—1, Roper Bros.; 2, Roper Bros.; 3, Frank H. Roper.

Heifer calf, under 1 year and over 6 months—1, Frank H. Roper; 2, Roper Bros.

Heifer calf, under 6 months and over 3 months—1, Frank H. Roper; 2, Roper Bros.

Herd consisting of 1 bull and 4 females, over 2 years old and owned by exhibitor—1, Frank H. Roper; 2, Roper Bros.

Breeders' young herd, to consist of 1 bull and 4 females, under 2 years of age; bull to be owned and females both owned and bred by the exhibitor—1, Roper Bros.

Champion bull, any age—1, Roper Bros.

Champion female, any age—1, Frank H. Roper.

CLASS 22—Holstein-Friesian.

Bull, 3 years old and upwards.—1, Lea Clark, Victoria; 2, W. J. Gibson, Marshfield; 3, R. B. McKinley, North River.

Bull, 2 years old—1, A. Roy Jones, 2 and 3, Lea & Clark.

Bull, 1 year old—1, 2 and 3, Lea & Clark; 4, A. H. Boswell, Little York.

Bull calf, under 1 year old and over 6 months—1 and 2, Lea & Clark.

Bull calf, under 6 months and over three months—1, Lea & Clark; 2, W. G. Gibson.

Cow in milk or calf, 3 years old and upwards—1, 2 and 3, Lea & Clark.

Cow in milk or calf, 2 years old—1, 2 and 3, Lea & Calrk.

Heifer, 1 year old—1, 2 and 3, Lea & Clark.

Heifer calf, under 1 year and over six months—1 and 2, Lea & Clark.

Heifer calf, under 6 months and over three months—1, Lea & Clark.

Herd consisting of 1 bull and 4 females, over 2 years old and owned by exhibitors—1, H. McRae & Sons; 2, Lea & Clark.

CLASS 23.—Shorthorn, Hereford, Polled Angus or Galloway Grades

Cow, 4 years old and upwards, in milk or calf—1, G. L. Hayden, Cherry Valley; 2, J. A. Stewart, Southport; 3, Vernon McMillan, Charlottetown; 4, H. A. Robertson, Alexandra; 5, Cass Bros., North River.

Cow in milk or calf, 3 years old—1, J. A. Stewart.

Heifer, 2 years old and under 3—1, S. L. Boswell, Pownal; 2, Joseph Praught, Pownal; 3 Cass Bros.

Heifer, 1 year old—1, J. W. Callbeck & Sons, Summerside; 2, Cass Bros., North River; 3, A. A. McBeth, Marshfield.

Heifer calf, under 1 year and over 6 months—1, G. L. Hayden, Cherry Valley; 2, J. A. Stewart, Southport.

Heifer calf, under 6 months and over 3 months—1, Almon Boswell, Marshfield; 2, J. A. Stewart.

SPECIAL PRIZES—Given by the Holsteni-Friesian Association

Champion bull—1, Lea & Clark, Victoria.

Champion female—1, Lea & Clark.

Three animals, either sex, the get of one sire—1 and 2, Lea & Clark.

Two animals, either sex, the progeny of one cow—1, Lea & Clark; 2, Lea & Clark.

CLASS 24.—Ayrshire Grades

Cow, 4 years old and upwards, in milk or calf—1, H. A. Robertson, Alexandra; 2, and 3, A. McRae & Sons, Charlottetown; 4, C. H. Robertson, Marshfield; 5, Calvin W. Wood, Southport.

Cow in milk or calf, 3 years old.—1, and 2, C. H. Robertson; 3, Wm. Gregory, Royalty.

Heifer, 2 years old and under 3,—1, C. Tupper Ferguson, Marshfield; 2, C. H. Robertson, Marshfield; 3, Robert Stewart, Winsloe Station.

Heifer, 1 year old—1, A. McRae & Sons; 2, C. H. Robertson; 3, Robert Stewart.

Heifer calf, under 1 year and over six months—1, Calvin W. Wood; 2, Byrne Bros., North River; 3, Robert Stewart.

Heifer calf, under 6 months and over 3 months—1, Calvin W. Wood.

CLASS 25.—Jersey or Guernsey Grades

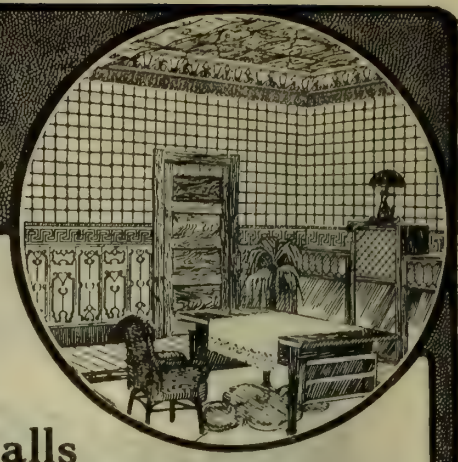
Cow, 4 years old and upwards, in milk or calf—1, J. A. Roper, Charlottetown Royalty; 2, Benjamin Rodd, Brackley Pt. Road; 3, J. A. Roper; 4, Frank H. Roper, Charlottetown Royalty; 5, A. McRae & Sons, Charlottetown Royalty.

Cow in milk or calf, 3 years old.—1, Robert Stewart, Winsloe; 2, J. A. Roper; 3, Wallace Stead, Highfield.

Heifer, 2 years old and under 3,—1, J. A. Roper; 2, Lea & Clark, Victoria; 3, Roper Bros., Charlottetown.

Heifer, 1 year old—1, Stephen Holroyd, City; 2, and 3, Robert Stewart.

Heifer calf, under 1 year and over 6 months—1, J. A. Roper; 2, Frank H. Roper.



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Heifer calf, under 6 months and over 3 months—1, J. A. Roper; 2, Frank H. Roper.

CLASS 26—Holstein Grades.

Cow, 4 years old and upwards, in milk or calf—J. L. Connelly, East Royalty; 2, W. J. Gibson, Marshfield; 3, A. Roy Jones, Hazelbrook; 4 and 5, C. H. Robertson, Marshfield.

Cow in milk or calf, 3 years old.—-, J. A. Stewart, Southport; 2, A. Roy Jones.

Heifer, 2 years old and under 3,—1, J. L. Connolly; 2, A.Roy Jones; 3, A. Roy Jones.

Heifer, 1 year old—1, Miss Grant, City; 2, J. L. Connolly; 3, A. Roy Jones.

Heifer calf, under 1 year and over 6 months—1, W. J. Gibson, Marshfield; 2, A. Roy Jones.

Heifer calf, under 6 months and over three months—1, Mrs. Dingwall Jenkins, Vernon River; 2, W. J. Gibson.

CLASS 27—Special Prizes Gixen by the P. E. Island Department of Agriculture.

To the person showing the greatest skill in judging beef cattle—1, Harold Leard, Kelvin Grove; 2, Cass Bros., North River; 3, Major McRae, Charlottetown; 4, Earle McRae, North Wiltshire; 5, A. L. Cairn's, Freetown.

CLASS 28—Steers

Best pair fat cattle, 2 years old—1, J. M. Leard & Son, Kelvin Grove.

Best single fat animal, 2 years old—1, J. M. Leard & Son; 2, J. M. Leard & Son.

Best single fat animal, 1 year old—1, Vernon McMillan, Charlottetown; 2, J. M. Leard & Son.

Best pair of steers, calves of 1915—1, Samuel C. Lane, Pownal.

SHEEP

CLASS 30—Leicesters.

Ram, 2 shears and over—1, Albert S. Boswell, Pownal, Lot 49; 2, Samuel C. Lane, Pownal, Lot. 49; 3, L. Boswall, Pownal, Lot 49.

Ram, shearling—1, Albert S. Boswall; 2 and 3, Samuel C. Lane.

Ram Lamb—1, 2 and 3, Albert S. Boswall.

Ewe, 2 shears and over, having reared a lamb this season—1, Albert S. Boswall; 2, S. L. Boswall; 3, Samuel C. Lane.

Ewe shearling—1, Samuel C. Lane; 2, Albert Boswall; 3, S. L. Boswall.

Ewe lamb—1, Albert S. Boswall; 2, S. L. Boswall; 3, Samuel C. Lane

Flock of Leicesters, consisting of ram and 4 females consisting of 2 ewes, each to have reared a lamb this season, one shearling ewe and one ewe lamb—1, Albert S. Boswall; 2, Samuel C. Lane; 3, S. L. Boswell.

CLASS 31.—Cotswolds.

Ram, 2 shears and over—1, John Tweedy, Earnscliffe.

Ram, shearling—1, John Tweedy, Earnscliffe; 2, George W. Woods, Hazelbrook.

Ram lamb—1, John Tweedy, Earnscliffe; 2, Harvey Tweedy, Earnscliffe; 3, George W. Woods, Hazelbrook.

Ewe, 2 shears and over, having reared a lamb this season—1, John Tweedy; 2, John Tweedy: 3, Harvey Tweedie.

Ewe Shearling—1, John Tweedy; 2, Harvey Tweedy; 3, George W. Woods

Ewe lamb—1, John Tweedy; 2, Harvey Tweedy; 3, George W. Woods.

Flock of Coltswolds, consisting of ram and 4 females consisting of 2 ewes, each to have reared a lamb this season, one shearling ewe and one lamb—1, John Tweedy; 2, Harvey Tweedy; 3, George W. Woods.

CLASS 32.—Lincolns

Ram, two shears and over—1, Albert Boswall, French Fort; 2, Ernest Lund, Mt. Herbert.

Ram, shearling—1, Almon Boswell; 2, Albert Boswell.

Ram lamb—1, and 2, Albert Boswell.

Ewe, 2 shears and over having reared a lamb this season—1 and 3, Ernest Lund, Mt. Herbert; 2, Albert Boswell.

Ewe, shearling—1, Albert Boswell; 2 and 3, Ernest Lund.

Ewe almb—1, Albert Boswell; 2, Ernest Lund; 3, Albert Boswell.

Flock of Lincolns, consisting of ram and four females, the females to consist of two ewes, each to have reared a lamb this season, one shearling ewe and one lamb ewe—1, Albert Boswell; 2 and 3, Ernest Lund.

CLASS 33—Southdowns

Ram, two shears and over—1, J. W. Bentley, Kensington; 2, Elijah Saunders, Winsloe Road; 3, Oliver Saunders, Winsloe Road

Ram, shearling—1, Elijah Saunders; 2, Oliver Sounders.

Ram lamb—1, Oliver Saunders; 2, Oliver Saunders; 3, J. W. Bentley.

Ewe, 2 shears and over, having reared a lamb this season—1 and 3, Oliver Saunders; 2, Elijah Saunders.

Ewe shearling—1, Elijah Saunders; 2 and 3, Oliver Saunders.

Ewe lamb—1, J. W. Bentley; 2 and 3, Oliver Saunders.

Flock of Southdowns, consisting of ram and four females, the females to consist of two ewes, each to have reared a lamb this season, one shearling ewe and one ewe lamb—1, Elijah Saunders; 2, Oliver Saunders; 3, J. W. Bentley.

CLASS 34—Shropshire Downs

Ram, two shears and over—1, Geo. S. Boswell.

Ram shearling—1, George S. Boswell; 2, Oliver Munn, Winsloe.

Ram lamb—1 and 3, George S. Boswell; 2, Almon Boswell.

Ewe, 2 shears and over, having reared a lamb this season—1 and 2, George S. Boswell; 3, Almon Boswell.

Ewe shearling—1 and 2, George S. Boswell; 3, Almon Boswell.

Ewe lamb—1 and 2, George S. Boswell; 3, Almon Boswell.

Flock of Shropshire Downs, consisting of ram and four females, the females to consist of two ewes each to have reared a lamb this season, one shearling ewe and one ewe lamb—1 and 3, George S. Boswell; 2, Almon Boswell.

CLASS 35.—Oxford Downs.

Ram, two shears and over—1, A. H. Boswell, Little York.

Ram, shearling—1, 2 and 3, J. M. Leard & Son, Kelvin Grove.

Ram lamb—1, J. M. Leard & Son; 2, A. H. Boswell.

Ewe, 2 shears and over, having reared a lamb this season—1, 2 and 3, J. M. Leard & Son.

Ewe lamb—1, A. H. Boswell; 2 and 3, J. M. Leard & Son.

Flock of Oxford Downs, consisting of ram and four females, the females to consist of two ewes, each to have reared a lamb this season, one shearling ewe and 1 ewe lamb—1 and 3, J. M. Leard & Son; 2, A. H. Boswell.

CLASS 36—Suffolks

Ram, 2 shears and over—-1, Albert Boswell, French Fort.

Ram, shearling—-1, Albert Boswell.

Ram lamb—1, Almon Boswell; 2 Albert Boswell.

Ewe 2 shears nd over, having reared a lamb this season—1 and 2, Albert Boswell; 3, Almon Boswell.

Ewe shearling—1, Albert Boswall; 2, Almon Boswell.

Ewe lamb—1, Albert Boswell; 2, Almon Boswell.

Flock of Suffolks, consisting of ram and four females, the females to consist of two ewes, each to have reared a lamb this season, one shearling ewe and 1 ewe lamb—1, Alber. Boswell, 2, Almon Boswell.

CLASS 37.—Hampshire Downs

Ram, 2 shears and over—1, Almon Boswell, Marshfield.

Ram shearling—1, Cephas Nunn, Winsloe.

Ram lamb—1, Cephas Nunn, Winsloe; 2, Oliver Nunn; 3, Almon Boswell.

Ewe, 2 shears and over, having reared a lamb this season—1, Oliver Nunn; 2, Cephas Nunn; 3, Almon Boswell.

Ewe shearling—1, Almon Boswell; 2, George S. Boswell; 3, Cephas Nunn.

Ewe lamb—1 and 3, Cephas Nunn; 2, Oliver Nunn.

Flock of Hampshire Downs, consisting of ram and four females, the females to consist of two ewes each to have reared a lamb this season, one shearling ewe and 1 lamb—1, Cephas Nunn; 2, Almon Boswell; 3, Oliver Nunn.

Dorset Horns

Ram, 2 shears and over—1, George S. Boswell; 2, John Tweedy, Earnscliffe.

Ram lamb—1, John Tweedy; 2 and 3, George S. Boswell.

Ewe, 2 shears and over, having reared a lamb this season—1 and 2, George S. Boswell; 3, Lois Taylor, city.

Ewe shearling—1, and 2, George S. Boswell; 3, John Tweedy.

Flock of Dorset Horns, consisting of ram and four females, the females to consist of 2 ewes, each to have reared a lamb this season; 1 shearling ewe and 1 ewe lamb—1 and 3, George S. Boswell; 2, John Tweedy.

Cheviots

Ram, 2 shears and over—1, Robert Furness, Vernon Bridge.

Ram shearling—1, Cephas Nunn; 2, Robert Furness.

Ram lamb—1, Robert Furness; 2, Cephas Nunn.

Ewe, 2 shears and over, having reared a lamb this season—1 and 2, Robert Furness; 3, Cephas Nunn.

Ewe shearling—1, Robert Furness.

Ewe lamb—1 and 2, Robert Furness.

Flock of Cheviots, consisting of ram and four females, the females to consist of 2 ewes, each to have reared a lamb this season; 1 shearling ewe and 1 ewe lamb—1, Robert Furness.

CLASS 40—Long Wool Grades

Ewe, 2 shears and over, having reared a lamb this season—1 and 2, Ernest Lund, Mt. Herbert; 3, Robert Furness; 4, S. L. Boswell, Pownal; 5, Samuel C. Lane.

Ewe shearling—1 and 3, S. L. Boswell; 2, Robert Furness.

Ewe lamb—1, S. L. Boswell; 2, Albert Boswell; 3, Ernest Lund.

Wether shearling—1 and 4, S. L. Boswell; 2, Samuel C. Lane, Pownal.

Wether lamb—1, S. L. Boswell, 2, Robert Furness; 3, Samuel C. Lane.

Best fat ewe or wether—1, S. L. Boswell; 2, Samuel C. Lane; 3, Ernest Lund, Mt. Herbert.

CLASS 41—Short or Medium Wool Grade

Ewe, two sheers and over, having reared a lamb this season—1, Oliver Saunders; 2, Robert Furness, Vernon River Bridge; 3, Oliver Saunders; 4, George W. Woods, Hazelbrook; 5, Elijah Saunders, Winsloe Road.

Ewe shearling—1, Elijah Saunders; 2, Albert S. Boswell; 3, A. H. Boswell.

Ewe lamb—1, Oliver Saunders; 2, Elijah Saunders; 3, A. H. Boswell.

Whether shearling—1, Almon Boswell; 2, Oliver Saunders; 3, Elijah Saunders.

SWINE

CLASS 42—Berkshires.

Boar, 2 years old and upwards—1, H. T. Prowse, Marshfield; 2, .. Ings, Pownall.

Boar, 1 year and under 2.--1, Peter Brodie, York.

Boar, over six months and under 1 year—1, G. W. Woods. Haxzelbrook.

Boar, under 6 months—1, G. W. Woods, Hazelbrook; 2, Peter Brodie, York; 3, Samuel C. Lane, Pownal.

Sow, 2 years and over, having reared a litter, spring or summer, 1914.—1, Peter Brodie; 2, George W. Woods.

Sow, 1 year old and under 2, having reared a litter, spring or summer, 1915.—1, Peter Brodie; 2, Geo. W. Woods.

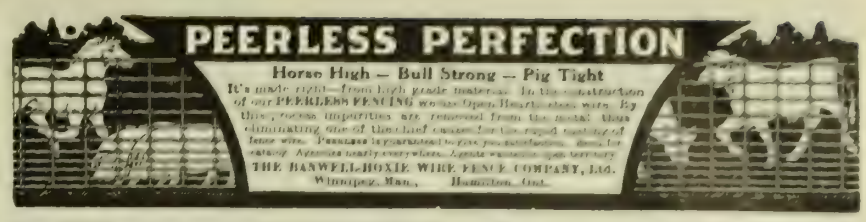
Sow, six months and under one year.—1,George W. Woods.

Sow, under six months—1, 3 and 4, Peter Brodie; 2, George W. Woods.

Pair of pigs, 3 months old and under 6 months, barrows excluded—1, Peter Brodie; 2, George W. Woods; 3, Samuel C. Lane.

Breeding sow with litter of not less than five pigs—1, and 3, George W.

(Continued on Page 23)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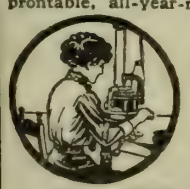

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THE HORSE

Fitting Horses for the Show Ring.

As the fair season is now on the subject of show horses and their preparation is appropriate and ought to be interesting to horse breeders generally, whether they are exhibitors this season or not.

The very first consideration in the line of preparing any animal for showing is to see that its health is as near perfect as possible. No possible good, but rather harm, will come from an attempt to fatten a horse or colt unless it is in really good vigorous health to start with. But back of even this important question of health is the primarily and still more essential matter of having a subject that with proper care and fitting can be made into a real show animal. Many breeders learn this lesson very slowly and grudgingly. They either make a mistake in selecting their animal or what is more likely they over-estimate the merits of some beast of their own breeding and are unable to see its defects even when perhaps repeatedly turned down by the judges.

Feeding for Show.

Assuming that you have procured a suitable horse or colt for the show ring and the animal is in good vigorous health, with no irregularly in his digestive organs nor fever in his legs, you should gradually increase his daily ration, keeping always in mind the necessity of having him respond from day to day to the more generous feeding. Scarcely any two animals are alike in their capacity to dispose of liberal rations, and this makes it practically impossible to prescribe a diet suitable for all. Some horses will eat and seemingly digest twice the amount that other horses can. It is always possible for horses to clean out their manger regularly and yet not be thriving. The groom or caretaker must watch closely the effect of an increased ration on the horse's general appearance and call a halt on the first symptoms of indigestion.

While some experienced and highly successful exhibitors pin their faith to simple oats and bran, others, including myself, prefer one daily feed of steamed oats or barley mixed with bran and chopped hay and with a handful of oil meal or flaxseed added to the mash. Quicker results will be got generally from this ration than dry aots and bran all the time. It is not, however, recommended to feed cooked feed oftener than once a day and for the other two feeds whole oats or bruised oats, but in no case finely ground oats, mixed with bran and chopped hay and very slightly moistened with water or preferably molasses water, but not sloppy. As an indication of quality three to five quarts each feed are suggested, but this must be left largely to the discretion of the caretaker.

Use No Drugs

It is not advisable to use drugs or "dope" of any kind. They are not necessary if the horse is healthy, and are usually more or less harmful. See that the animals get plenty of exercise daily and all the water he will drink, but never until at least two hours after eating.

Accustom the colt to walk smartly in a straight line with head well carried, to trot squarely, but not too fast, and, what is equally important, to stand like a soldier on parade. Some horses always seem awkward when standing and this gives the judge a poor impression.

The show horse must, of course, be regularly and thoroughly groomed; his coat ought to shine with lustre and have every hair in its proper place. Perfect health and show yard bloom are manifested by the high spirits, the bright intelligent eye and the shining coat.

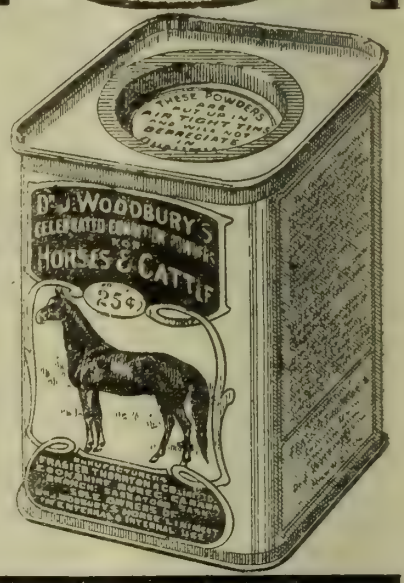
The mechanics of draft and popular opinion alike demand absolutely straight front action and tolerably close action in any kind of a horse. The intending exhibitor should, therefore ,see that his colt neither paddles nor straddles. These faults, if not very pronounced, can be helped partly by a skilful blacksmith, but nature after all is the main arbiter, and guide, so it is the part of wisdom to try and breed the kind that go straight naturally. A light shoe without any heel is preferable to a heavy shoe with bevelled edge and prominent heel in the case of a paddling horse. The heavy shoe intensifies the defect.

The chief benefit which an exhibitor gets in the show ring is experience. If he keeps his eyes open and silently learns the inevitable lesson—accepts the judges' verdict as just (and it usually is)—and puts the result of his observations into practice with a determination to succeed, he is bound to come to the front some day both as a breeder and exhibitor.

Pricks in Shoeing.

What takes place in the foot when a horse is pricked in shoeing, or is stabbed by a gathered nail, depends a good deal on the exact seat and extent of the mischief. There are variations and degrees in almost every disease and accident to which horses are liable, and punctured wounds of the foot are no exception Direct puncture ic not very common, since the farrier who has any experience at once recognizes that from one of several causes the nail has gone wrong by the difference in the "feel" of the driving, and promptly withdraws it. Mischief rarely follows if the nail is left out, but matters may form if, to conceal the mishap, a second nail is driven to fill the hole. "Binging" nails are the most common source of injury, and, though popularly called "pricks," they are not really so, but consist of nails driven so close to the sensitive foot structure as to press upon it, or to do so after a few days when the shoe happens to shift. This kind of injury may not become apparent for a week or more after shoeing, and is especially liable to occur in thin, weak feet. Then the first mischief is irritation arising from pressure, local inflammation and the formation of pus. Much the same thing takes place when the sensitive foot is directly punctured, either when the nail is driven in shoeing or picked up, except that lameness is generally at once apparent. and a "gathered" nail may penetrate important structure of the posterior part of the foot, or even severely damage the bone. A punctured wound of the foot would not be anything more serious than a punctured wound of any other part except for the peculiarity of its structure, and its being cased in horn.

Death, although possible, is not by any means the inevitable result of neglected prick. When a fatal issue results, either tetanus (locked-jaw) or blood poisoning is the most common cause. The more common sequel is the establishment of sinus, a wound of the foot popularly known as quittor —cases that sometimes prove so obstinate that an early fatal termination would have been a real boon to all concerned. What takes place is that the matter formed in the foot has no outlet or "vest," and unless this is provided promptly by opening the hole, or making provision for drainage through a dependentorifice, the pus burrows among the foot structures, causes separation between the laminae, forms sinuses or "pipes" and finally breaks out at the coronett, or "between hair and hoof," the opening exuding a thin, unhealthy-looking discharge, and displaying no disposition to heal. When the nail or stub causing the mischief has been found, its course should be followed with the knife and free exit given to pus. The foot should then be poulticed, and this should be applied until the surface is smooth, dry and not at all tender. The shoe may then be applied, nails being left out of the vicinity, and cover, without pressure, provided until the horn has grown again. A leather sole with a packing of tar and tow is usually put on for a few weeks after a bad prick. Cases in which there is persistent lameness are sometimes due to severe damage to the pedal



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Deputy of the Minister of the Interior.

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bone, and the existence of a dead scale, acting as a foreign body and a source of irritation.—Veteran.

How Colds are Contracted.

The popular idea is that colds and the bronchial and pulmonary troubles that follow in their train invariably result from exposure to cold, wet, and inclement weather. In some cases they may arise from these causes, but the majority are due to causes exactly the reverse, and more colds are contracted from breathing a close, impure atmosphere than from being exposed to inclement weather in the open. A horse used to a warm stable and clothing, and perhaps newly shorn of its coat, seems to take no harm when turned out in cold weather, provided that it is well fed, while the same animal, brought from apparently uncomfortable conditions outside, exposed to wet and every wind that blows, and placed in a stable with other horses, almost certainly develops a bad cold and cough. Colts, when first brought under cover, especially in a stable that has other occupants, are pretty sure to cough and run at the nose, and they often require most careful nursing to avoid pulmonary complications and permanent affection of the wind. In bringing colts in for breaking purposes, it is a bad plan to put them in a stable with other horses. They are pretty sure to go wrong, and this, of course, interferes with their training. Theq should be put in a shed or roomy box stall that is well ventilated, and gradually accustomed to the change from a life of freedom in the open air where there is room to breathe as well as to move.

Sore Shoulders of Horses.

In the rush of field work much inconvenience and delay to the farmer, and excruciating pain to horses, may be prevented by care of the necks and shoulders. An improperly fitted or lumpy collar often causes a bruise, which later breaks into a running sore. A hard core or kernel is formed, which must be removed before this sore will heal. Often young or excitable horses will bruise themselves, even when supplied with well-fitting collars, by jerking, jumping, or uneven pulling. Some horses seem prone to collar sores, and must be carefully watched to avoid this troublesome injury. To prevent is more easy than to cure. Harden the neck and shoulders by bathing several times a week with salt water or vinegar in salt water. A little alum may be added. As a substitute for the old oak-bark solution, try tannic acid dissolved in glycerine. This toughens the skin by tanning it.

When a sore begins to appear which is usually characterized by a slight swelling, very warm and painful, do not work the animal for a day or two, if possible. If the horse cannot be spared, make a well-fitting felt pad, with the centre cut out, and place this over the injury. Healing powders or ointments, such as zinc oxide, boric acid, sulphur and lard, or carbolated vaseline may be used. If a watery serum runs from the sore, equal parts of tannic acid and powdered alum will prove efficacious. Severe caustics, such as blue vitroil, and the like, very often make the condition worse. Only soothing medicines should be used, allowing Nature full sway. If the shoulder becomes covered with sores, it is because they are contagious, the germs being found in the pus. A good blood tonic is often needed, and in bad cases the services of a competent veterinarian.—The Country Gentleman.

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"I had a bad hand with four running sores on it. The more I doctored the worse it got. I used Caustic Balsam and never needed a doctor after that."—Ed. Rosenburg, St. Ansgat, Ia.

Mrs. James McKenzie, Edina, Mo., says: "Just ten applications of Caustic Balsam relieved me of goitre. My husband also cured eczema with it, and we use it for corns, bunions, colds, sore throat and pain in the chest."

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POULTRY

The Influence of Soil and Climate.

It is ofter imagined that the reason why poultry-keepers of other lands have always been so successful is because they are more favorably situated than we are as regards soil and climate. When it is asked why we have to import such huge quantities of eggs from abroad we are told that it is because fowls of other lands are more prolific, the result of their living under more favorable circumstances. Never was there a greater mistake. To say that our climate is responsible for the importation of such vast quantities of eggs and poultry is altogether wide of the mark, and will not bear close examination. It is just as easy to produce eggs in England as it is in Italy, for instance, or table fowls in Scotland as it is in France.

England's Premier Position

For generations and generations past England has held the premier position in the breeding of high-class stocks of all kinds. The skill and experience of our breeders have, of course, played an important part in maintaining the high standard of excellence, while the somewhat cramped conditions under which our people have had to work, and the consequent rigid selection of the breeding stock, have likewise exerted an influence. At the same time, had the conditions been unfavorable, or at any rate as unfavorable as many would have us believe, this high standard of excellence could not possibly have been maintained.

Climatic Conditions Abroad.

This applies to poultry in the same way as it does to larger stock. We have only to examine the conditions in the countries from whence we have been in the habit of importing our huge supplies of eggs to realize that we are more favorably situatied than they are. In Russia and the Netherlands the extremes of temperature are far greater than in the United Kingdom. In France, Italy and Austria-Hungary the winters are far colder, and the summers far hotter than they are with us, In the United States, one of the most successful poultry-keeping countries in the world, the climatic conditions are not nearly so favorable. As a matter of fact, we are most fortunately situated, and we cannot fairly blame our climate for our lack of success in the past. It is quite wrong to suppose that very hot summers are advantageous. Those who have travelled in the States or in many countries of Europe during the summer months will bear me out in this, for they must realize that scorched pastures and dried-up streams cannot possibly be beneficial. There is no doubt but that one of the reasons if not the main reason, why fowls in Southern Europe are so small and of such poor edible qualities is due to the intense heat of the summers. The less extreme the temperature of both summer and winter, the better it is for stock of every kind.

The Question of Soil

Soil also plays an important part in the health and prolificacy of fowls. When selecting a breed for a certain locality or for a certain purpose, the nature of the soil should always be taken into consideration. This is proved by the fact that if a breed of fowls is exported, say, to Australia, frequently it changes in many of its chief characteristics. Even in the different countries of Europe this is the case. Examples could be given were it necessary to do so, but probably nineteen out of every twenty poultry-keepers have observed this for themselves, without perhaps divining the cause. As a general rule, it may be accepted that white-fleshed fowls thrive upon a light soil, that those with grey flesh and legs do best upon a medium soil, while those with yellow legs and flesh thrive anywhere, even upon a heavy clay.

The Non-sitters

So far as number and size of eggs are concerned, the non-sitters are our best fowls. These are small, active breeds usually very hardy, rapid growers, and poor in their edible qualities. They are mostly spring and summer layers, although when they are hatched at the right time of year they may be depended upon to produce a certain number of eggs during the winter months. They cannot, however, compare with the general-purpose varieties in this respect. Without exception they all produce white-shelled eggs. The following are the conditions best suited to them:

Soil.	Breeds recommended.
Clay	—White, brown or buff Leghorn, Ancona, Redcap.
Medium.	—Black Minorca, Andalusian, Houdan.
Gravel	—Any non-sitting variety.

The General-Purpose Breeds

These are the birds which combine both egg-producing and edible qualities. They are more prolific than the table varieties ,although their meat properties are not quite so good, while they are better on the table than the non-sitters, although they do not produce so many eggs. The hens are quiet sitters and reliable mothers; the chickens grow fairly quickly; the cockerels make capital table birds. General-purpose fowls are the best winter layers we have. They all without exception produce tinted-shelled eggs. The following are the conditions under which the general-purpose breeds thrive best:

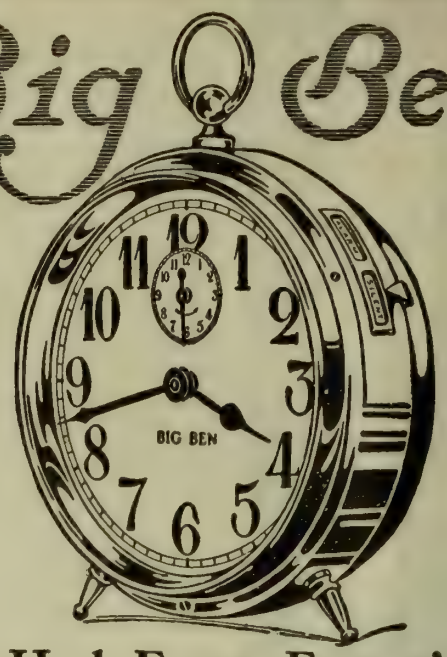
Soil.	Breeds recommended.
Clay.	—Plymouth Rock, Wyandotte, Light Brahma.
Medium.	—Wyandotte, Plymouth Rock. Langshan, Orpington.
Gravel	—Any of the above breeds.

The Table Breeds

These birds excel in their meat or flesh-producing properties. They are generally large, with a deep and broad body, a perfectly straight and long keel, carrying a large amount of white meat upon the breast and wings. Their bones should be soft. Rapid development and readiness to fatten are also important features. The following are the conditions under which the respective breeds thrive most satisfactorily:

Soil.	Breeds recommended.
Clay	—No table variety thrives well on clay soil.
Medium.	—Faverolles, Indian Game, Sussex.
Gravel	—Dorking, Game, Sussex. —English Exchange.

Big Ben



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A Poultry Yard Vice.

For some reason or other egg eating is particularly prevalent during the present season. Why this is so, I do not know. But the fact remains that in many yards great trouble and annoyance are being experienced. Fowls which are kept in confinement are always more prone to this complaint than are those enjoying a free range. As a matter of fact, when poultry have their liberty they very rarely contract the habit of egg eating. This proves pretty conclusively, I think, that one of the chief causes of the trouble is idleness, since fowls at freedom are so busily occupied in searching for worms, grubs, seeds, etc., that they have no time and no inclination to eat their eggs. There are, however, other causes beside lack of occupation to account for the prevalence of this complaint.

Some Causes of Egg Eating.

One of the worst features of egg eating is that it is so difficult to discover and often it is prevalent in a poultry yard for quite a long time before a hen is actually caught in the act. As it is, it is generally found out merely by accident, by discovering a hen engaged in the practice, since what adds considerably to the difficulty is that shell as well as contents is consumed, thus leaving no trace. When laying hens are receiving an insufficient supply of shell-forming material they frequently commence pecking at the eggs in order to satisfy their needs. Lack of shell-forming material in the diet generally results in one of two things, either the hens eat the egg, or else soft-shelled eggs are produced, one of which is as bad as the other. It may surprise some to learn that in one hundred eggs of ordinary size, there are 22 oz. of pure lime. There is on better way of providing this necessary lime than by supplying the birds liberally with broken oyster shell, which can generally be obtained for next to nothing. Excellent samples of specially broken shells can be secured at a very low figure. When too few nest-boxes are provided in the sleeping quarters the hens are forced to lay on the ground and the presence of eggs lying about is an encouragement to egg eating. There should always be provided at least one nest for every three hens, while one box for every two is all the better.

The Need for Employment

Arrangements should be made to provide fowls that are confined in runs with some means of occupation and amusement since, as I have already mentioned, idleness is a common cause of this complain. When there is a scratching shed attached to the house —and for many reasons such a plan is advisable—the floor should be littered with straw or chaff, and the grain scattered there among. This provides exercise and occupation for several hours of the day. A mangel or cabbage should be suspended from the roof to within a foot or so of the ground; in fact, just out of the birds' reach, which greatly assists in keeping them busily engaged. A piece of meat buried a few inches below the ground decays quickly, and the maggots coming up to the surface provide both food and recreation for the fowls.

A Cure

Prevention is always infinitely better than cure, and the careful poultryman will see to it that the causes are removed. A plan that may be adopted, however, once the habit has got a hold is to blow an egg and refill with a mixture of cayenne pepper and mustard. This should be left in a prominent place on the floor of the scratching shed or in the roosting compartment. It will probably be pecked at by one or more of the fowls, and should this occur it is almost certain to be the last egg that is ever eaten.—Expert.

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NITRO CLUB—a steel-lined "Speed Shell" that *gets more birds.* Steel lining permits higher compression—produces more power—insures straight line-drive. The swiftest shell on the market—an exclusive Remington-UMC product.

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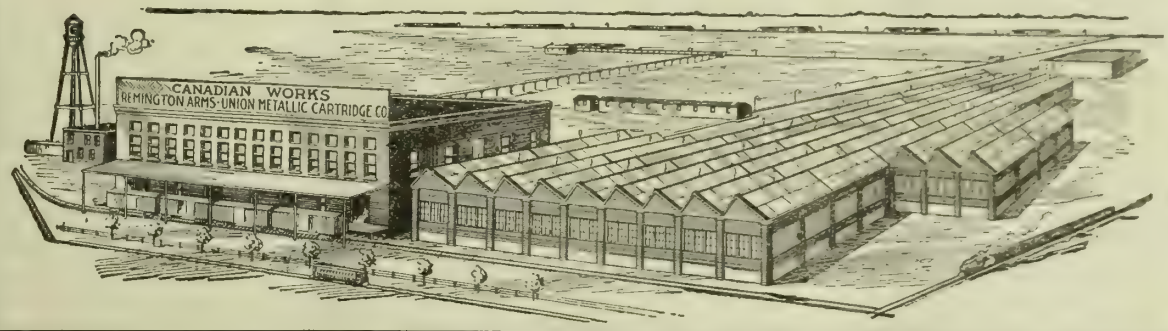

Gathering and Sorting Eggs.

The best quality of poultry and eggs will command the highest prices in the right markets. The man or woman who keep fifty hens or more should constantly study how to put her products up in the best possible form. To do this eggs should be gathered frequently during the hot weather, as well as in the cold weather. When gathered they should be placed in a cool, dry cellar, where they should be graded ready for market. Even if just doing a small private trade it is well to do this as it establishes a good habit for future bigger business. This sorting should be done with great care. First all cracked and soiled eggs should be removed and used at home. We all know what a variety of colors and sizes we get in a basket of freshly gathered eggs from one breed. These different colors and sizes are better to be graded in order to have a uniformity of appearance. Of course all very small and abnormally large eggs should also stay at home.

First of all strive to produce a good article, then seek the market that appreciates the fine product, properly put up, and cater to the high standards og that market.

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

The Other Crosses

Adopted From an Italian Legend
By Anna Emmerson

Half past seven! They should have been home a half an hour ago." Mrs. Richards went to the front door and looked down the street. It was a misty night, the street lamps shining hazily through the fog. There was no sign of her sister-in-law, and her own grandchildren, so she shut the door with a sigh and went back to her place beside the open fire in the big comfortable sitting room.

Mrs. Richards was fifty. Once she had been a beautiful woman, and there were times, when she smiled, that the beauty of her youth still showed. Lately, however, she had seldom smiled, and she had come to wear a discontented expression most of the time. There was no real reason for the look, for if she could have realized it, her life had had its full share of the world's happiness and very little of the pain. But Mrs. Richards chose to consider herself a badly used woman, and she never lost the opportunity to impress the fact upon everyone with whom she came in contact.

Mr. Richars was a very good husband. At twenty he had started out to be a success in life, and so hard had he worked as a builder that a goodly sum was laid aside for the time when it would be needed. Lately Mr. Richards had been ill. Rheumatism had caught him in its clutches and forced him to give up active work. It made no difference to their mode of living, but Mrs. Richards found in his illness a new worry. The agony of having an idle man sitting about the house? It is true he never caused her any trouble, and he was particularly good at entertaining Ruth's children, who were always as obedient as could be. Still Mrs. Richards had to help him up and down stairs days when his rheumatism was very bad, make him remember to take his medicine on time, and in many small ways play the man of the house.

The Richards had two children, a son and a daughter. Most sons, Mrs. Richards always told herself, would have been willing to stay at home and follow their father's trade, but not so with her boy. He had gone off to the city, and everyone knows what city life can do for a young man. As it happened John was particularly successful and very much of a credit to his name. That much she couldn't give him any credit for, for wasn't he her own son Still, there he was in the city, like as not falling in love with some girl, and if he married whatever good would it do her|

And Ruth! Just when she had trained Ruth to be a help to her, she had gone and fallen madly in love with George Seaton. To think of her daughter doing anything so ridiculous! They were married, and George took her to live in the city. Mrs. Richards supposed he was a good husband. Ruth seemed to like him and the two little girls adored their papa. Then again, just when Ruth might have been some comfort to her, she had to go and get sick. Such a foolish thing for a strong, country-bred girl as Ruth! The doctors had decided that she had better be moved to a sanitarium, and there she was, making a six months' stay, surrounded by every luxury. That was just it, Mrs. Richards mused, Ruth off in a sanitarium and her poor mother slaving away to look after the two small children! Of course, George paid her for taking care of them, but they were such a bother and she was always worrying for fear something would happen to them.

Mrs. Richards looked at the clock. It was twenty minutes to eight now. Sre went again to the front door and looked down the street. Whq didn't Mary bring them home? It was damp and muddy, and the children had no business being out. Then, too, as they were not here, she would not be able to go over to Mrs. Johnson's. She really had not thought of going to Mrs. Johnson's until that very minute, but now she had something else to worry abou. It was a reception for the new preacher, a little informal gathering of some of the leaders of the church work. If Mary had only brought the children home then she could have gone. As it was she'd have to stay at home and put them to bed. Mary was such a queer woman, never saying a word, just went about her work trying to make things as cheerful as possible for everybody about her. Mr. Richards and the two little girls adored Mary, but personally, Mrs. Richards didn't like her. She was suspicionus of her silence.

Finally when eight o'clock came and Mary had not returned from the supper party where she had taken the children, Mrs. Richards went upstairs, donned her outdoor clothing and announced to her husband that she was going out.

Mrs. Johnson's parlors were full when she arrived, and after shaking hands with the new minister she found a place in the corner where she poured into the ears of two sympathetic listeners a long recital of her imagined troubles. Presently the minister gave a short address. She really hardly paid any attention until the end when he said something which was so appropriate to herself that she leaned forward to hear the better.

"And we must always do every little thing we can to help our neighbors," the preacher said. "We each of us have our cross to bear, and no one knows how heavy it is. Carry it cheerfully, and when you can, do something to help your neighbor carry his or her cross. You cannot tell your neighbor's burden—the heaviest crosses are sometimes the most cheerfully borne."

It was raining when the short meeting was over, and Mrs. Richards trudged home thinking how well the minister had summed up her own case. Many people in the village thought she was well off, but she sighed, "I don't believe there's a soul in the county who has such a heavy cross as I have to bear. If I could only change with someone! What have I done that Providence has served me so?"

When she got home she found that Mary and the children had only just come in. She scolded Mary for keeping them out so late, saying that she knew that they had taken cold. They sniffed a little as they were being put to bed, and she scolded anew, especially little Ruth. She did not know that the child was secretly grieving the loss of a battered, stuffed rabbit, that she herself had thrown away that morning. To Mrs. Richards the dirty, ragged but loved toy was so much rubbish for the furnace, and she had never given it another thought,—not even when she had seen the two little girls weeping silently as they had sat together on the top step of the porch. She switched off the electric light and went downstairs to close up the house for the night.

Mrs. Richards had been asleep some time when she awoke with the sense that someone was in the house. She called cautiously to her husband, but he did not waken.

"It's always the way," she said to herself. "it is always put on my shoulders."

She was not in the least afraid of any intruder, rather she was full of a determination that if anyone were attempting to rob her home, he should be caught and punished. She drew on a pair of slippers, and throwing a heavy dressing gown over her shoulders, went to the door.

The remarkable part of it all was that at the time Mrs. Richards was not the slightest bit astonished at what she found. When she looked over the banisters of the big square hall she saw that a light burned in the sitting room. She went down stairs and in through the open door. The sitting room had changed. It was larger much larger, and there was no furniture anywhere around. As she looked about her she saw that on every wall hung crosses of every size—some big, some small, some beautifully carved, others roughly nailed together. She noticed that there was hardly a square inch on the wall to be seen between them. From the far end of the room a young man with short curly hair and a shining white robe stood and looked at her.

"Well," Mrs. Richard said in amazement, "what's all this?"

"Good evening," said the angel. "You said tonight that you wished to change. I have come to offer it to you."

"I said I wished to change?" she queried.

"Yes, and I happened to be listening."

"A change of what?" Mrs. Richards asked.

"Of crosses," the angel said, softly. "I have brought you the crosses borne by everyone in the village, and you may take your pick."

"In exchange for the one I now carry " she asked meekly.

"Yes, you may take them all down and try to find one which you would like to carry."

Mrs. Richards looked all about. She wouldn't take the smallest of the crosses—she was willing to bear her share of the world's troubles—but it did not seem to her that she should have to carry all that had rested on her shoulders up to the present time.

After a minute spent in selection, Mrs. Richards took down what seemed to be a medium-sized cross. It really wasn't heavy, not the first minute or two, but after a while she found that there were splinters in the wood, and they dug tormentingly into her hands, and it hurt her shoulder.

"No, I don't want that," she said decidedly, as she hung it back. "Whose is that?"

"Your husbands."

"My husband's| What has he to bear?"

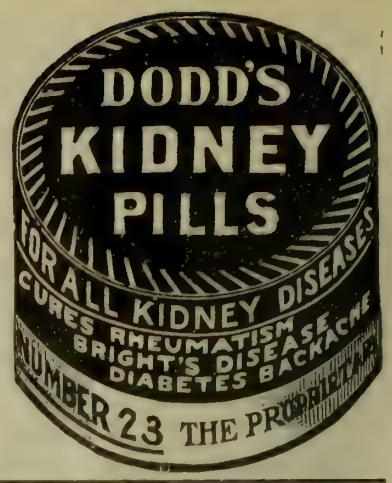
The angel drew a book from beneath his robe and opened it:

"Pain, ill health, and worst of all, an unloving, nagging wife," he read.

Mrs. Richards looked at him speechless. She said nothing, however, for something in the angel's look made her silent.

Next she took down another cross, a much smaller one this time, and the handle of it was worn smooth, as though it had been carried a long time. Mrs. Richards almost dropped the cross from her shoulders, it was so heavy.

"Heavens," she exclaimed, "I'll put



WOMAN SUFFERED TEN YEARS

From Female Ills—Restored to Health by Lydia E. Pinkham's Vegetable Compound.

Belleville, N.S., Canada.—"I doctored for ten years for female troubles and did not get well. I read in the paper about Lydia E. Pinkham's Vegetable Compound and decided to try it. I write now to tell you that I am cured. You can publish my letter as a testimonial." — Mrs. SUVRINE BABINE, Belleville, Nova Scotia, Canada.

Another Woman Recovers.

Auburn, N. Y.—"I suffered from nervousness for ten years, and had such organic pains that sometimes I would lie in bed four days at a time, could not eat or sleep and did not want anyone to talk to me or bother me at all. Sometimes I would suffer for seven hours at a time. Different doctors did the best they could for me until four months ago I began giving Lydia E. Pinkham's Vegetable Compound a trial and now I am in good health."—Mrs. WILLIAM H. GILL, No. 15 Pleasant Street, Auburn, New York.

The above are only two of the thousands of grateful letters which are constantly being received by the Pinkham Medicine Company of Lynn, Mass., which show clearly what great things Lydia E. Pinkham's Vegetable Compound does for those who suffer from woman's ills.

If you want special advice write to Lydia E. Pinkham Medicine Co. (confidential) Lynn, Mass. Your letter will be opened, read and answered by a woman and held in strict confidence.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

NEPONSET
PAROID ROOFING
ASK US TO PROVE THAT THIS IS THE MOST ECONOMICAL ROOFING YOU CAN BUY
DEPARTMENT 730
BIRD & SON, HAMILTON, ONT.
SOLD BY DEALERS EVERYWHERE

this one back, if you please. Whoever does that belong to, and what makes such a heavy cross seem so small?"

"That is Mary Richards', your sister-in-law's. It looks small because she does her best to make life happy for those about her. That cross is made up of years of sorrow, lost love, loneliness, cruel tongues, and the burdens that she has taken from other people's shoulders."

Mrs. Richards was silent for a moment. "Well, this one's small enough," she said, but she drew back her hand as quickly as she had put it out. The small cross had a large thorn in the handle of it, and her finger was bleeding from the prick.

"That cross belongs to your little granddaughter, Ruth Seaton. She has a sensitive, loving spirit, which is tortured by every unkind act."

Mrs. Richards had gone on to the next cross, but the wood was sticky, and uncomfortabel to hold.

"That cross belongs to your daughter. She has ill health, and a longing to be able to be with the ones she loves."

Mrs. Richards took down cross after cross, but each one of them was either too heavy, too rough, or in some way hopeless to handle. She came to know that the largest crosses were by no means the heaviest.

At last she found herself at the end of the room, underneath a huge cross which covered almost the entire wall. She had not noticed this cross before. and looked at it sharply. Suddenly she saw to her surprise that it was made of nothing but woven feathers, light and soft to the touch. She took it down and hardly felt it as it rested on her shoulders.

"I guess I'll take this one," she laughed in triumph. "It must be a mighty lucky person that doesn't have any more trouble than this one does. Thank you very much for this change. I'd like to know—"

"That is your own cross," the angel said, and vanished.

Interesting Reports From The New Brunswick Women's Institutes.

The Chocolate and Cummings Cove Branch of the Women's Institutes of New Brunswick was organized by Miss Winter and Miss Jonathan the evening of July 28, 1914, with a promise of eighteen members. The first Friday in the month was chosen as the night of meeting and the first session was held at the home of the president on the evening of August 7, where, owing to the disagreeable weather, only nine were able to join. The next night of meeting, in September, only 1 new member came in and in October seven were added to the list. Since that time our membership has steadily increased until now it totals thirtyone. We have been able to hold a meeting each month since the Institute was organized, and the attendance and interest have been good.

Our work for the year has been mainly patriotic. In September we had a sale at which we realized $18.00 for patriotic purposes; $15.00 of this was sent to Mrs. Bruce for the Hospital Ship Fund and the other $3.00 found its way to the treasurer of the Red Cross Society, to be used for hospital supplies.

On January 30th, a birthday party was given and the sum of $44.00 was taken. Of this amount $5.00 was sent to Lady Tilley towards the endowment of a hospital bed at the front for New Brunswick; $9.00 was spent on the purchase of a suitable gift for the young men who went with the 26th Battalion from this community. We sent $5.00 more to the Red Cross Society for hospital supplies, and the remainder was used to buy material to be made up into socks and hospital shirts. Forty-five pairs were knitted and 23 hospital shirts made, and one quilt made by our members and all forwarded at different times and to differe tnplaces for use in Red Cross work.

In May, 50 "Allied for Right" buttons were sold, the proceeds of which, $5.25, together with $5.00 from the Institutes funds were forwarded to Miss Winter to be used towards the purchase of a motor ambulance.

In June a sale was held, the proceeds of which, $12.00, is being used to make some much needed repairs in the cemeteries of Chocolate Grove and Cummings Cove. We pay $5.00 per year for the use of the hall in which we hold our meetings and 25c a night to the janitor insures having a warm, well lighted room. The latter sum is raised by a tax of 2c per night on each member present. This always gives us a small surplus which is placed in the general Institute funds.

We wish to thank the Department for the grant of $5.00, also for books forwarded to us through Miss Winter. We hope these may be the beginning of a library which will be of great benefit to our community.

The programmes are made out by a committee one month in advance and each seems willing to do her part to make the meetings pleasant and profitable.

The outlook for next year is encouraging. We fell sure that all our old members will come in again and we have the promise of new ones.

We feel that the success of our Institute is due mainly to the fact that a spirit of harmony exists among the members, each one being willing to abide by the decision of the majority. While we may not always be of exactly the same mind, still we work as one, realiging the sound truth of the old saying, "United we stand, divided we fall."

This helpful report was forwarded to the department by Mrs. Onslo L. Haney, secretary-treasurer of the Chocolate and Cummings Cove Institute.

Grand Harbor Women's Institute.

An interesting report comes from Miss Hazel M. Newton, secretary-treasurer of the Grand Harbor, (Crand Manan,) Women's Institute.

In the year which is past, it is gratifying to note that our Branch has increased in membership. At the close of last year our report showed a membership of 33. Now we have enrolled 42 and one of our energetic members has brought in four new names for the coming year.

In other respects as well our branch can report progress. We are now the proud possessors of a library of 61 volumes. A number of members donated a volume each, and most generous contributions were received from Mrs. Gregg Beckett, Calais, and Miss Theo. Stevens, St. Stephen.

A committee appointed by the Institute to devise some means of raising money faithfully in preparing a drama which was presented to the public and greatly increased our bank account.

Several demonstrations and addresses have been given by outside parties. Namely—Dr. Johnson, an address on "Bad Air"; Miss Alma Benson, demonstrating "Bed Making for the Sick"; and Miss Jonah, from the department, gave demonstrations in cake and candy making. All of these were very interesting and much appreciated.

We had a large attendance at our social in February and it was considered a great success. Mr. Gosline delivered an excellent address on: "What the Women's Institutes can do for the Moral Uplift of the Community."

The following members have demonstrated or given samples of cookery: Mrs. G. L. Dakin, Mrs. George Lawrence, Mrs. Scott D. Guptill, Mrs. Wesley Newton, Mrs. D. H. Daggett, Mrs.

It's good for little girls, too

Everybody—young and old—loves the rich, delicious flavor of

EDWARDSBURG "Crown Brand" CORN SYRUP

It is a daily treat—the perfect sweet. Just what the children should have on Bread—costs far less than butter or preserves. Delicious with Hot Biscuits, and Batter Cakes. Gives a new delight to Baked Apples, Blanc-Mange and Puddings. Makes the best Candy you ever tasted. 3

"LILY WHITE" is a pure white Corn Syrup, not as pronounced in flavor as "Crown Brand". *Your Grocer has both Brands, in 2, 5, 10 and 20 pound tins—or can easily get them for you.*

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PURITY FLOUR

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RED ROSE TEA "is good tea"

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To prove that ADIPO, a pleasant, harmless Obesity Treatment, will take fat off any part of the body, we send a

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to anyone who is too fat. Adipo requires no exercising or dieting, nor does it interfere with your usual habits. Rheumatism, Asthma, Kidney and Heart troubles that so often come with Obesity, improve as you reduce. Let us prove it at our expense.

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And enclose 10 cents to help pay distribution expenses.
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C. A. Newton, Mrs. Wm. Cronk, Mrs. A. O'Neill, Mrs. Neill Guptill, Mrs. B. F. Johnson, Mrs. Frank Lakeman, Miss Grace Ingalls, Mrs. I. L. Newton.

In this time of national distress our members have striven to aid, by contributions of clothing, etc., to the needy Belgians, as well as industriously working to supply comforts for our own soldiers. I might here state the number of articles which have been sent: 1 quilt, 1 dozen nightshirts, 1 dozen belts, 58 pairs of socks, 3 cases of clothing. The quilt which I mentioned is to go to one of the New Brunswick beds at the front. We greatly appreciated the donation of socks from Mrs. Cossaboom as well as from others not members of the branch.

Our ranks have been broken by death during the year and one of our young homemakers has been taken from our midst; this sad event prevented the Button Campaign which we had planned on organizing. However, Miss Winters sent us 200 "Allied for Right" buttons and all except 20 of these have been disposed of, giving us $21.00. To this we added $29.00 from the funds, making a total of $50 sent to Miss Winter for the motor ambulance fund.

Lessons in Life from Weeds

Written by Miss Idello Robinson, and read at a meeting of the Newtown and Smith's Creek Women's Institute.

Are there lessons in life to be learned from these simple but harmful things known as "weeds"? We are taught to define weeds as "plants growing out of place." Have we any little things in our lives that should have no place there? Have we weeds in our lives?

For our comparison let us choose on the one side that which will appeal to men and women alike,—the plot of ground composed of the vegetable and flower garden combined,—and on the other side the life which God has given us; the life in which we must have our work and our pleasures combined. Surely the vegetable garden from which we expect a part of our food may be compared with the business or more serious part of our lives. Surely, too, may we compare the flower garden with its beautiful and wonderfully scented flowers,, with the pleasure of our lives.

We have these then for our comparison. Let us start at the beginning and see how nicely the comparison will work out.

Early in the spring we look upon our plot of ground and we see a patch of bare brown earth. From that glance we little know the vitality hidden there, ready to give wonderful growth to the small miniature plantlets hidden in the apparently dry and lifeless seeds, we will later scatter there. Neither can we tell from looking at that plot of earth the great number of small seeds scattered there, by various agencies from some neglected plot of weeds of the year before. These weed-seeds are surely there in greater or lesser numbers and ready to spring itno growing life and fill our garden with weeds.

We look at a very young child and as with the plot of earth, little can we tell the possibilities before that child. The strength of character, the capacfor study, the great and good things which may be accomplished by that child, whose life is just starting, are all hidden from us. Neither can we tell from looking upon that child what weaknesses may be scattered there that may later cause that life to be marred by the yielding to temptations. As in the plot of soil we have no idea of the weed-seeds scattered there, neither can we tell the number of small tendencies within that child for wrong-doing—tendencies that may be weed-seeds scattered there by example of others or by sins committed by its fore-fathers.

We plough and harrow our garden plot and in every way we prepare it to receive good seed from our hands. We improve its looks, we add to its strength, and we destroy as many as possible of the little weeds as they make their first start. We choose those seeds that will bring forth plants either useful or ornamental and we plant those seeds with system and care.

The life of a child is similar indeed. Children are trained in various ways as soon as they can understand the difference between right and wrong. They are punished sometimes when they may feel the punishment unnecessary and hard to bear.

However, in doing that the parents are trying to overcome the little tendencies to do those things that are wrong and to lay the foundation for a strong, wholesome character. They are killing the small miniature habits, starting growth from the weed-seeds already in the child's life, and they are sowing the seeds of good habits in the hope that they may take root.

In our garden plot not all the weed seeds or weeds will be destroyed by our ploughing, harrowing and working of the soil. Some may be, for the time, hidden and escape—others may have a deep root system firmly established and persistent work is required. It may be, too, that another's garden plot near ours have been neglected an dsome early maturing plants have produced seeds that may be carried to our garden, where if neglected they may take root. So throughout the growing season we must be persistent in destroying the weeds in our garden, an din giving all encouragement to theh growth and development of our vegetables and flowers.

So it is in our lives, the training at home and later in the school will do much toward training the child to do right and to avoid wrong. However, some of theses little weaknesses may not come to light until later. The early training means much, but life in developing is under changing circumstances. New temptations may arise from time to time even as weed-seeds from another's neglected garden. These must be met and overcome if that life is to bring forth the right fruits, and the beautiful pleasures of living.

We have been taking for granted that our garden and our life have been kept free from weeds. Let us suppose on the other hand that both have been neglected, what have we as a result

In our neglected garden, improperly plowed and ahrrowed in the spring, seeds chosen at random and planted withotu care or system, neglected work of weeding and encouragement throughout the growing season and we have—What? A tangled mass of weeds and a few stunted vegetables and flowering plants. The weeds have grown without hindrance, they have sapped the fertility and moisture from the soil, thus robbing the useful palnts and crowding them out. The good has been crowded out and the weeds are producing seeds to be a pest to next year's crop. Have we a pleasant picture?

In a neglected life of one improperly trained in youth, where little attention has been given to the early laying of the foundation for a good character, where little has been done to check the tendencies for doing wrong, and that little done without careful thought what have we? A life stunted in every way; the possibilities for great good have been hidden or destroyed, and crowded out by the yielding to temptations, and an example has been made to sow weed-seeds upon some other life developing near at hand or awaiting future development. Is this a pleasant picture?

As we look out upon our garden at this closing season of the year, do we find it free from weeds? Have we given it every possible care and attention? Have we brought our vegetables and flowers to maturity as best we could Are there any weeds there which may by growth of root, or by scattering of seeds, render the possibilities of next year's crop less likely, or can we look out with pride and feel that we have done our best?

We are all developing now. Will it be possible for us as we near the closing of our lives to look back and see that the good has been developed? Will we be able to know that we have conquered our weaknesses and overcome temptations for wrong-doing before they reach maturity? Will we be able to feel that we are leaving an example that will help others in their development?

As we look at our lives just as they are today, can we feel that we are doing all we can to resist our weaknesses? Can we feel that we are setting a good example and doing our duty toward younger ones around us? Let us ask ourselves this question: "Have we weeds in our lives?"

GRAY HAIR

Dr. Tremain's Natural Hair Restorative, used as directed, is guaranteed to restore gray hair to its natural color or money refunded. Positively not a dye and non-injurious Price $1.00, post-paid. Write Tremain Supply Co., Dept. 31 Toronto, Ont.

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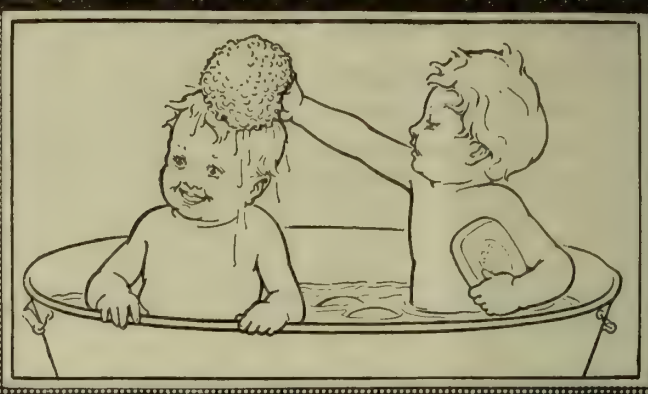

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The creamy softening lather of Baby's Own Soap and the fragrance of its delicate aroma leave the skin cleansed—refreshed—aromatized

Four generations of Canadian mothers have used and recommended it.

In the interest of your children's skin insist on Baby's Own Soap

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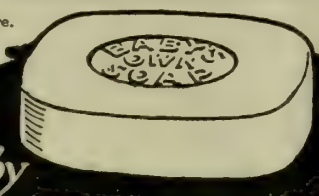
Sold everywhere. 1815



Best for Baby *Best for You*

Stains which bother in the laundry are of three kinds, i.e., those caused by vegetable growth, those from actual chemical compounds and those caused by a deposit of small, solid particles.

Mildew is perhaps the strain which puzzles the housekeeper the most. It is the most common type caused by vegetable growth. When this stain is examined under the microscope, one can see a network of tiny tendrils which cannot be seen without the aid of the microscope. On the ends of some of these tendrils can be seen small cup-shaped organs which hold small seeds or spores, which scatter over the cloth and start new plants. This is the way the mildew stains spread all through a garment. These little tendrils will, if given time, find their way through many layers of the material.

Oxygen will destroy the mildew plant, but it will thrive in a damp, warm place. To remove mildew from a garment, first give it a thorough airing and then place in boiling water; the character of the stain in changed and it is now a chemical compound, for the mold has produced a dye. A bleaching process has to be resorted to now to remove the stain. Soak the garment in equal quantities of hot water until the stain disappears; thoroughly rinse in three waters; then rinse in water to which a little ammonia has been added.

The Charlottetown Exhibition.

(Continued from Page 15)

Woods; 2, Peter Brodie.

Sweepstake boar—1, Peter Brodie.

Sweepstake sow—1, Peter Brodie.

Pen, consisting of 1 boar and three females, any age—1, Peter Brodie; 2, George W. Woods.

CLASS 43—Yorkshires

Boar, 2 years old and upwards—1, J. W. Callbeck & Sons, Summerside.

Boar, over six months and under 1 year—1, J. W. Callbeck & Sons.

Boar, under 6 months—1, George Crockett, York; 2, J. W. Callbeck & Sons; 3, Wallace Stead, Highfield.

Sow, 2 years and over, having reared a litter, spring or summer 1915. —1 and 2, J. W. Callbeck & Sons; 3, George Crockett, York.

Sow, 1 year old and under 2, having reared a litter, spring or summer 1915. —1 and 2, J. W. Callbeck & Sons; 3, George Crockett.

Sow, six months and under one year. 1 and 2, J. W. Callbeck & Sons.

Sow, under six months—1, 2 and 4, J. W. Callbeck & Sons; 3, George Crockett.

Pair of pigs, 3 months old and under 6 months, barrows excluded—1, 3 and 4, J. W. Callbeck & Sons; 2, George Crockett.

Breeding sow with litter of not less than five pigs—1, J. W. Callbeck & Sons; 2 and 3, George Crockett.

Sweepstake boar—1, J. W. Callbeck & Sons.

Sweepstake sow—1, J. W. Callbeck & Sons.

Pen, consisting of 1 boar and 3 sows. 1, J. W. Callbeck & Sons.

CLASS 44—Chester Whites

Boar, 2 years old and upwards—1, E. Wheatley & Co., City; 2, T. H. Prowse, Union Road

Boar, over six months and under 1 year—1, T. W. Prowse, Union Road.

Boar, under 6 months—1, Ramsey Auld, Covehead; 2, Henry McCallum, Dunstaffnage; 3, O. H. Boswall, Little York; 4, Wallace Stead, Highfield.

Sow, 2 years and over, having reared a litter, spring or summer 1915. —1, Wallace Wood, Alexandra; 2, Wallace Stead; 3, Gordon Wheatley; 4, T. W. Prowse.

Sow, 1 year old and under 2, having reared a litter, spring or summer 1915. —1, T. W. Prowse; 2, Wallace Wood.

Sow, 6 months and under 1 year—1, Wallace Stead.

Sow, under 6 months—1 and 4, Wallace Stead; 2 and 3, T. W. Prowse.

CLASS 46—Export Bacon Hogs

For the best pen of 2 pure bred hogs, most suitable for export bacon. The hogs in this section to be bred and owned by the exhibitor, and each pen entered must be of the same breed. Hogs to weigh not less than 160 lbs., and not more than 220 lbs., and to be judged in relation to length and even depth of side, width of back, size of shoulder and head, and well developed hams.—1 and 3, George Crockett; 2, J. W. Callbeck; 4, Wallace Stead, Highfield.

For the best pen of 2 hogs of any cross or grade, most suitable for export bacon. Hogs to weigh not less than 160 lbs., and not more than 220 lbs., and to be judged in relation to length and even depth of side, size of shoulder and head, and well developed hams.—1, Joseph Praught, Pownal; J. W. Callbeck & Sons, Summerside; 3, George Crockett, York; 4, Peter Brodie, York.

Messrs. Davis & Fraser, of the city of Halifax, offer special prizes for the two best finished hogs, any breed, not weighing over 125 lbs., when dressed. The two animals must be the property of one exhibitor. Hogs shown in any other class are eligible to compete for this prize. The principal points in judging will be nice, thick, plump ham, and the side suitable for English breakfast bacon—1, J. W. Callbeck & Sons; 2, George Crockett 3, Peter Brodie; 4, George W. Wood.

Grades

Pair of pigs, 3 months old and under 6 months, barrows excluded.—1, T. W Prowse; 2, Wallace Stead; 3, A. H. Boswall.

Breeding sow, with litter or not less than 5 pigs—1 and 3, T. W. Prowse; 2, Wallace Wood.

Sweepstake boar—1, Wallace Stead.

Sweepstake sow—1, Wallace Wood.

Pen, consisting of 1 boar and three females, any age—1, Wallace Stead.

CLASS 47.—Fowls

Anconas, mottled, cock—1, and 2, E. J. Vessey, York.

Anconas, mottled, cock—1 and 3, E. J. Vessey; 2, Robert J. Hudson.

Andalusian, cock—2, Thos. C. Latham, Sylvester, Pictou county, N.S.

Andalusian hen—1 and 2, Thos. C. Latham; 3, Robert J. Hudson.

Bantam, Japanese, cock—1, Spring Park Poultry Yards, Charlottetown.

Bantam, Japanese, hen—1 and 2, Spring Park Poultry Yards.

Bantam Cochin cock—1, Spring Park Poultry Yards.

Bantam Cochin hen—1 Spring Park Poultry Yards; 2, Robert J. Hudson.

Bantam Seabright, cock—1, Spring Park Poultry Yards.

Bantam, Seabright, hen.—1, Spring Park Poultry Yards.

Bantam, Rosecomb, cock—1, Spring Park Poultry Yards.

Bantam, Rosecomb, hen—1, Spring Park Poultry Yards; 2, Robert J. Hudson.

Bantam, Poland, white cock—1, Spring Park Poultry Yards; 2, G. Carter, Halifax, N.S.

Bantam, Poland White, hen—1. Spring Park Poultry Yards; 2, G. Carter.

Bantam, any other variety, cock—1, Spring Park Poultry Yards; 2, G. Carter.

Barhma, light or dark cock—1, John Whitlock, City.

Brahma, light or dark hen—1, John Whitlock.

Dorking, any variety, cock—1, John Whitlock; 2, Russel Sample, City; 3, Penelope McKinnon, City.

Dorking, any variety, hen—1, John Whitlock; 2, Penelope McKinnon; 3, Russel Sample.

Hamburg, silver spangled, cock—1, and 2, Picton C. Brown, City.

Hamburg, silver spangled, hen—1 and 2, Picton C. Brown.

Hamburg, golden penciled, cock—1, A. H. Boswell York.

Hamburg, golden pencilled. hen—1 and, A. H. Boswell; 3, Lyle Boswell, Marshfield.

Hamburg, silver penciled, cock—1, Spring Bank Poultry Yards; 2, Lyle Boswell; 3, A. H. Boswell.

Hamburg, silver penciled, hen—1, Lyle Boswell; 2, Spring Park Yards; 3, A. H. Boswell.

Houdan, cock—1, G. L. Hayden, Cherry Valley.

Houdan, hen—1, G. L. Hayden.

Leghorn, white S. C. cock—1, Evangeline Poultry Yards, Wolfville, N.S.; 2, John Blanchard, Charlottetown; 3, Wm. Beazly, Halifax, N. S.; 4, John Blanchard.

Leghorn, White, S. C. hen—1, Evangeline Poultry Yards; 2, Wm. Beazly; 3, John Blanchard; 4, Peter Brodie, York.

Leghorn, brown, S. C. cock—1, John Whitlock, Charlottetown; 2, Thos. C. Latham, Pictou Co., N.S.; 3 and 4, George Chilton, Charlottetown.

Leghorn, brown, S. C., hen—1, Geo. L. Boswell, French Fort; 2, John Whitlock, Charlottetown; 3, George Chilton; 4, Thos. C. Latham.

Leghorn, buff, S. S., cock—1, W. W. Osborne, New Glasgow, N. S.; 2, John Blanchard; 3, G. Carter, Halifax, N.S.

Leghorn, buff, S.C., hen—1 and 2, W. W. Osborne; 3, G. Carter.

Leghorn, brown or white, R.C., cock. —1, George Chilton.

Leghorn, brown or white, S.C., hen. —1, George Chilton.

Minorca, black, S.C., cock—1 and 2, Wm. J. Cudmore, Charlottetown; 3, John Whitlock, Charlottetown.

Minorca, black, S.C., hen—1 and 2, Wm. J. Cudmore; 3, G. Carter; 4, John Whitlock.

Minorca, black, R.C., hen—1, Robert J. Hudson, Charlottetown.

Minorca, white, S. C., cock—1, Chas. Pippy, Mount Herbert.

Minorca, white, S.C., hen—1 Chas. Pippy, Mount Herbert.

Orpington, buff, cock—1, G. Carter; 2, John Blanchard; 3, John Whitlock.

Orpington, buff, hen.—1, George Cudmore, Charlottetown; 2, Arthur Nelson, Charlottetown; 3, G. Carter.

Orpington, any other variety, cock—1, Henry Gurney, East Royalty.

Orpington, any other variety, hen—1, Henry Gurney, East Royalty.

Plymouth Rock, barred, cock—1, George Chilton.

Plymouth Rock, Barred, hen—1, Evangeline Poultry Yards.

Plymouth Rock, white, cock—1, Spring Park Poultry Yards; 2, Mrs. Albert Boswell, French Fort; 3, John Whitlock, Charlottetown.

CLASS 48—Chickens

Anconas, mottled, hen—1, E. H. Vessey, Little York.

Andalusian, cock—1, Perley Mutch, Southport; 2, Perley Mutch.

Andalusian, hen—1, Perley Mutch.

Bantan, Japanese, cock—1, Spring Park Poultry Yards.

Bantam, Japanese. hen—1, Spring Park Poultry Yards.

Bantam, rosecomb, cock—1, Spring Park Poultry Yards.

Bantam, Poland, white cock—1, Spring Park Poultry Yards.

Bantam, Poland, white, hen.—1, Spring Park Poultry Yards.

Brahma, light or dark cock—1, John Whitlock.

Brahma, light or dark hen—1, John Whitlock.

Dorking, any variety, cock—1, Penelope McKinnon, City; 2, Russel Sample, Charlottetown.

Dorking, any variety, hen—1, Penelope McKinnon; 2, Russel Sample.

Hamburg, silver spangled, cock—1, and 2, Picton C. Brown.

Hamburg, sinver spangled hen—1, and 2, Picton C. Brown.

Hamburg, golden pencilled, cock—1 and 2, A. H. Boswell, Little York; 3, Lyle Boswell, Marshfield.

Hamburg, golden penciled, hen—1, Lyle Boswell; 2, A. H. Boswell.

Hamburg, silver penciled, cock—1 and 3, A. H. Boswell; 2, Lyle Boswell.

Hamburg Silver Penciled, hen—1 and 2, A. H. Boswell; 3, Lyle Boswell.

Leghorn, white, S.C., cock—1, Evangeline Poultry Yards, Wolfville, N.S., 2, Mrs. Alfred Thorne, Charlottetown; 3 and 4, W. J. Pickard. West Royalty.

Leghorn, white, S.C., hen—1, Evangeline Poultry Yards; 2, Mrs. Alfred Thorne; 3, William Beazley; 3, W. J. Pickard.

Duck, A.O.V., female, hatched 1915. —1, Spring Park Poultry Yards; 2, Mrs. Albert Boswell.

Leghorn, brown, S.C., cock—1 and 2, John Whitlock, City; 3, George S. Boswell, French Fort.

Leghorn, brown, S.C., hen—1, Thos. C. Latham; 2, John Whitlock, Charlottetown; 3, Thos. C. Latham.

Leghorn, buff, S.C., cock—1, 2 and 3, W. W. Osborne.

Leghorn, buff, S. C., hen.—1 and 2, W. W. Osborne.

Leghorn, brown or white, R.C., cock —1, George Chilton; 2, Robert Enman, West Royalty.

Leghorn, brown or white, R.C.—1, John Whitlock; 2, George Chilton; 3, Robert Enman.

Minorca, black, S.C., cock—1 and 2, Wm. J. Cudmore, Charlottetown, 3 G. Carter, Halifax, N. S.

Minorca, black, S.C., hen—1, Wm. J. Cudmore; 2, G. Carter; 3, Wm. J. Cudmore.

Minorca, white, S.C., cock—1, Chas. Pippey, Mt. Herbert; 2, Harry Jenkins, Hazelbrook; 3, Byrne Bros., North River.

Minorca, white S. C., hen—1, Chas. Pippey; 2, Harry Jenkins; 3, Byrne Bros.

Orpington, buff, cock—1 and 2, Geo. Cudmore, Charlottetown; 3, J. P. Darte, Charlottetown.

Orpington, buff, hen—1, 2 and 3, George Cudmore.

Plymouth Rock barred, cock.—1, George Crockett.

Plymouth Rock, barred, hen—1 and 2, George Crockett.

Plymouth Rock, white, cock—1, John Whitlock.

Plymouth Rock, white, hen—1, Mrs.

(Continued on Page 26)

CITY WATER SERVICE on the Farm

ALL THE CONVENIENCES OF A CITY HOME

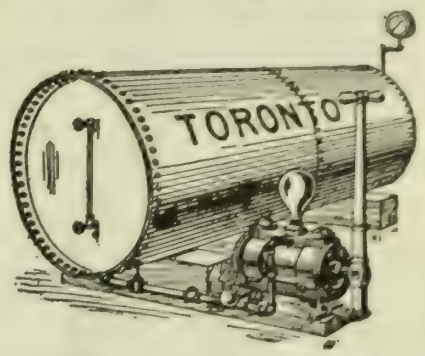
The farmer and his wife—just been to the city or town. Called on a friend or relative. Thirsty. Thirsty? Would you like a drink of water? Certainly. Turn on the tap and help yourself.

Going home, THE FARMER'S WIFE—How nice it would be if we were in town so that we could have those conveniences. No need. The farm is the best place on earth to live, and with a

Chapman Water System

you can make it an earthly paradise.

A cold, dark winter's night, just going to bed and have to go outside before retiring—the wind whistling through the cracks, chills to the bone—how nice would have been the toilet in the house.



Get that installment now.
To wait is to regret!

WRITE FOR CATALOGUE.

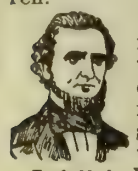
Ontario Wind Engine & Pump Co.

ATLANTIC AVENUE, TORONTO. Limited

Write to Head Office or Nearest Branch: Montreal, Winnipeg, Calgary.

Guard Children Against Worms.

There is really very little cause for sickness if the proper care is taken to guard against disease. Worms are one of the most dreaded diseases of children.



Trade Mark

Signs of worms are: Deranged stomach, swollen upper lip,) sour stomach, offensive breath, hard and full belly with occasional grippings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on the tongue; starting during sleep, slow fever.

Dr. True's Elixer, the Family Laxative and Worm Expeller, will surely and quickly expel worms. Good for adults also. At dealers, 35c, 50c and $1.00. Advice free. Special treatmetn for tapeworms. Send for bo k.

Dr. True

"IN TIMES OF WAR PREPARE FOR PEACE"

Plant fruit trees now, so as to reap the harvest when peace is restored. We can supply choice Apple trees, Ornamental trees and Shrubs, Raspberry, Gooseberry, Currant and Strawberry plants of our own growing at lowest prices. Bees and Beekeepers Supplies. Satisfaction guaranteed. Write for prices.

E. L. COLPITTS,
PETITCODIAC, - N. B.

Prize Winners at the Fredericton Exhibition

(Continued from Page 9)

Squash, warted Hubbard—1, B. Goodspeed; 2. Geo. Delong; 3, Al. Keene.

Squash mammoth—1, B. Goodspeed; 2, Geo. Pugh; 3, Gordon MacFarlane, Nas'sis.

Squash, Essex hybrid—1, B. Goodspeed; 2, H. Dickson; 3, J. Bebbington.

Squash, vegetable marrow—1, H. Dickson; 2, B. Goodseped; 3, Mrs. Darcus.

Squash, any other variety—1, A. Keene; 2, Gordon McFarlane; 3, Geo. Pugh.

Tomatoes, red—1, Harold Estey, Island View; 2, Harry Steen, Fredericton; 3, A. Gorham.

Tomatoes, green—1, A. Gorham; 2, J. Bebbington; 3, B. Goodspeed.

Tomatoes, assorted collection—1, J. Bebbington & Son; 2, B. Goodspeed.

Watermelon—1, W. N. Sterritt.

Best collection of garden vegetables—1, J. Bebbington & Son; 2, J. W. Smith & Son; 3, B. Goodspeed.

Burpee special prizes—1, Mrs. Darcus; 2, B. Goodspeed.

HORSES

Thoroughbreds.

Stallion, 3 years old and up.—1, Canadian Nat. Bureau of Breeding, Montreal; 2, George Carvill, St. John; 3, George Holmes, Amherst.

Stallion, 2 years—1, Clover Nook Stock Farm.

Stallion, one year—1, George Holmes.

Filly, 3 yrs. and up.—1, George Holmes.

Filly, two years.1, George Holmes.

Foal of 1915.—1, George Holmes.

Brood Mare and foal—1, George Holmes.

Standard Bred

Stallion, 3 years and up—1, H. C. Jewett; 2, and 3, W. B. Lint.

Filly, three years and up.—1, Geo Holmes.

Filly, two years,—1, Frank Good, Lr. Fr. Village.

Filly, one year.—1, H. O'Neill; 2, Frank Good.

Brood mare and foal—1, George Holmes.

Hackneys

Stallion, three years and up—1, R. Snowball; 2, E. T. Shaw, Hartland.

Stallion, one year—1, W. M. Johnston, Newcastle.

Filly, three years and up—1, W. Anderson, Halifax; 2, R. A. Snowball.

Filly, two years—1, R. A. Snowball; 2, George Holmes.

Filly, one year—1, R. A. Snowball.

Foal of 1915—1, W. M. Johnston; 2, N. J. Maher, Chatham.

Brood mare with foal—1, W. M. Johnston; 2, N. J. Maher.

Coach.

Stallion, three years and up.1, H. C. Jewett.

Brood mare and foal—1, Burden Smith, Woodside.

Clydesdales

Stallion, three and up—1, R. A. Snowball; 2 and 3, MacFarlane Bros.

Stallion, two years—1, R. A. Snowball; 2, Alphonse Kelly.

Stallion, one year—1, R. A. Snowball.

Filly, three years and up—1 and 3, R. A. Snowball; 2, McFarlane Bros.

Filly, two years—1, Alphonse Kelly.

Filly, yearling—1, Clover Nook Stock Farm; 2, and 3, McFarlane Bros.

Foal of 1915.—1, M. Scovil & Sons, Gagetown; 2, A. Kelly; 3, McFarlane Bros.

Brood mare and foal—1, McFarlane Bros.; 2, M. Scovil & Son; 3, A. Kelly.

Percheron

Stallion, three years and up—1, H. C. Jewett; 2, F. J. Sullivan, Windsor, Ont; 3, D. P. Clayton, City.

Stallion, two years—1 and 2, F. J. Sullivan.

Suffolk Punch

Stallion, three years and up—1, P. K. Stuart, Benton Car Co.; 2, Shaw Bros., Andover.

Clydesdale (Special)

Stallion.—1, R. A. Snowball.

Mare—1, R. A. Snowball; 2, McFarlane Bros.

Best filly or gelding—1, R. A. Snowball; 2, and 3, McFarlane Bros.

Percheron Special

Given by H. C. Jewett.

Foal of 1915.—1, Frank Brown, Maugerville; 2, Hedley Aiken, Fredericton; 3, John Hill, Nas'sis.

Clydesdale Special

Given by H C. Jewett

Foals of 1915.—1, M. Scovil & Son; 2, A. Kelly.

Special Carriage Horses

Given by H. C. Jewett

Get of any of H. C. Jewett's carriage stallions—1, John Elliot, City; 2, B. Goodspeed, Penniac.

Saddle Horse ridden by gentleman.—1, George Carvell, St. John; 2, Margaret Carvell; 3, John Elliott.

Saddle horse ridden by lady—1, Margaret Carvell; 2, Eileen Keenan; 3, Eileen Cushing.

Jumper ridden by lady—1, Margaret Carvell; 2, Eileen Cushing.

Military class—1, Margaret Carvell; 2, Geo. Carvell; 3, John Elliott.

Carriage horses—1 and 2, R. A. Snowball; 3, Geo. Sturgeon, Fredericton.

Matched pair—1, R. A. Snowball; 2, Frank Burnett; 3, John R. Jewett.

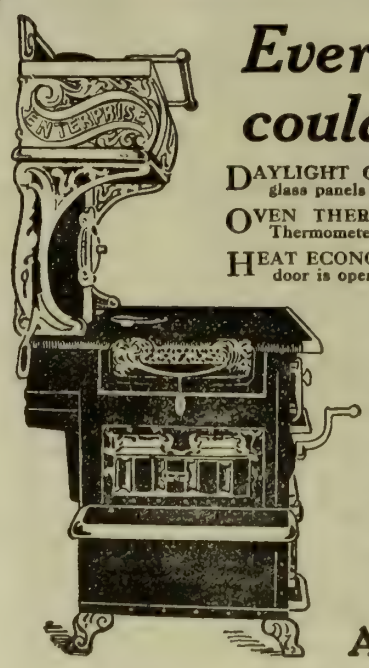
Mare or gelding driven by lady—1, Margaret Carvell; 2, W. Anderson; 3, H. G. Kitchen.

ROADSTERS

Single horse—1, Thos. Raymond, Fredericton; 2, W. B. Lint, Fredericton; 3, H. G. Kitchen, Fredericton.

Matched pair—1, Geo. Holmes; 2, Frank Burnett; 3, John R. Jewett.

Mare or gelding, driven by lady.—1, Mrs. D. M. Richards, Fredericton; 2, Geo. Holmes, Amherst; 3, H. G. Kitchen.



Everything you could ask for—

DAYLIGHT OVEN, if required—with heat-proof glass panels in door.

OVEN THERMOMETER, always reliable, and Thermometer guide.

HEAT ECONOMIZER, that holds oven heat when door is open.

CONVENIENT TOWEL RODS, not in the way.

TRIPLE BODY—rolled steel, asbestos lining, outer wall of polished blue steel plate.

REMOVABLE RESERVOIR, without dampers to interfere with baking.

ROOMY WARMING CLOSET, of blue steel, with detachable shelves and tea stands.

CONTROLLER-DAMPER, controlling fire perfectly.

GUARANTEE—goes with every Monarch sold.

All in the

ENTERPRISE Steel

Monarch Range

THE Monarch is the "Range De Luxe"—the best you can possibly get. It is made right here in Eastern Canada, however, so that it is very reasonable in price.

Other stoves have some of these features—The Monarch has them all, with others that we cannot list here. You must see a Monarch to even partly appreciate it. When you have used one, you will agree that it's the finest range made.

Write for a free copy of the book we've published about the Monarch, and for the name of our representative in your neighborhood.

Enterprise
FOUNDRY CO. SACKVILLE, N.B.

General Purpose Horses

Not exceeding 1350 lbs.—1 and 2, Goodspeed.

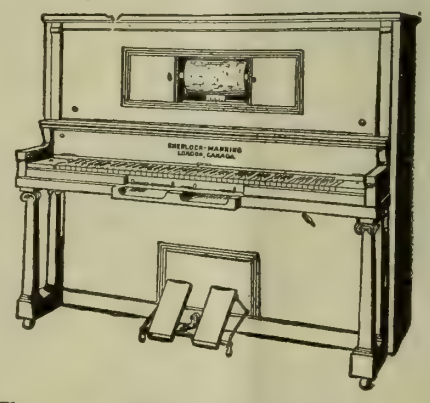
Matched team—1, Frank Burnett; 2, Frank Burnett, French Village; 3, B. A. E. Kilburn; 3, W. Illingworth.

$150 Saved is $150 Earned

That's Our Offer on This Superb Player-Piano !

The Sherlock-Manning Player Piano contains every recognized attachment and all the latest features for the proper rendition of compositions by the great masters.

It has devices for controlling the tempo, for varying expression to suit one's own interpretation, for subduing the accompaniment or the melody as desired. Its Selector Button causes the roll to run silently when the performer wishes to omit any portion of a selection.



The Player Piano—Stye 95.

SHERLOCK-MANNING 20th Century PIANO

" Canada's Biggest Piano Value "

is so named because while in quality it is the best that can be made, it sells for $100 to $150 less, and we are not afraid to put it in your home under a straightforward ten-year guarantee.

We want to send you proofs. Write Dept. 6 for handsome Art Catalogue J, to-day. A postal will do it.

THE SHERLOCK-MANNING PIANO CO.,

LONDON (No street address necessary) CANADA

HAD CHOLERA INFANTUM.

Doctor Said He was In a Very Dangerous Condition.

Mothers cannot watch their children too closely for signs of cholera infantum as this disease carries off thousands of infants during the hot summer months.

Mrs. Geo. W. Garland, Prosser Brook, N.B., writes: "Last summer my boy Joe, then a year old, was taken sick with cholera infantum. He was so bad the waste matter from the bowels looked as if it had come from a broken boil. I sent word to the doctor who was at a neighbor's, about a mile distant, and he said my boy was in a very dangerous condition. He sent me some tablets which made the child vomit, and when he learned that they caused vomiting he sent me more tablets to stop it. In the meantime I had been giving Dr. Fowler's Extract of Wild Strawberry, which I continued using, and when the bottle was all used my baby was cured. I though it only fair to let you know about it."

Dr. Fowler's Extract of Wild Strawberry has been on the market for the past 70 years, and is known from one end of Canada to the other as a positive cure for all bowel complaints.

When you ask for "Dr. Fowler's" be sure you get what you ask for as there are many rank imitations on the market.

The genuine is manufactured by The T. Milburn Co., Limited, Toronto, Ont.

Price, 35 cents.

Brood mare and foal over 1100 lbs.—1, Austin Burnett; 2, Geo. Holmes; 3, W. B. Gilman.

Filly or gelding over 1200 lbs.—1, Geo. Holmes; 2, Moses Fleming; 3, McCullough Bros.

Filly or gelding, 2 years old—1, Asa Currie; 2, Geo. Holmes; 3, Chas. McAdam, Douglas.

Yearling filly or gelding—1, McFarlane Bros.; 2, B. Goodspeed.

Foal of 1915.—1 and 2, W. B. Gilman; 3, Frank Brown.

Span in harness not under 1100 each—1, Geo. Holmes; 2, R. T. Baird, Fredericton; 3, Alphonse Kelly.

PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money, but tell others of this offer. Write today to Mrs. M. Summers, Box P 309 Windsor, Ont.

Minard's Liniment Co., Limited.

Gents,—A customer of ours cured a very bad case of distemper in a valuable horse by the use of MINARD'S LINIMENT.

Yours truly,
VILANDIE FRERES.

Brood mare and foal not under 1400 lbs.—1, McFarlane Bros.; 2, W. B. Gilman; 3, H. E. Dewar, Fredericton.

Filly or gelding, 3 years and over, 1200 lbs.—1 and 3, R. A. Snowball; 2, McFarlane Bros.

Filly or gelding, 2 years, over 1000 lbs.—1, Alphonse Kelly; 2, Wm. Clark, Fredericton; 3, Asa Currie.

Yearling filly or gelding—McFarlane Bros.

Foal of 1915.—1, Alphonse Kelly; 2 and 3, W. B. Gilman.

Span not under 1400 each—1, McFarlane Bros.; 2, R. A. Snowball; 3, Wm. Clark.

Ponies in harness—1, Mrs. John Doherty; 2, Hazel Wilcox.

Ponies, over 12 hands—1 and 2, R. A. Snowball.

Ponies, pairs—1, R. A. Snowball.

CATTLE

Beef Breeds

Shorthorns.

Aged bull—1, Fred Cromwell, Cookshire, Que.; 2, R. S. Snowball, Chatham.

Bull, under 2 years—1, McCullough Bros., Mouth Keswick.

Bull, under 18 months—1, John R. Jewett, Macniquac; 2, H. Baldwin, Chatham.

Bull calf under 12 months.—1 and 2, R. A. Snowball; 3, McCullough Bros.

Calf under 6 months—1, R. A. Snowball; 2, McCullough Bros.

Cow, 4 years and up—1 and 2, R. S. Snowball; 3, John R. Jewett.

Cow, three years old—1, R. A. Snowball.

Cow or heifer, 2 years.—1, and 2, R. A. Snowball; 3, McCullough Bros.

Heifer, under 2 years—1 and 2, R. A. Snowball; 3, John R. Jewett.

Heifer, under 18 months—1, John R. Jewett.

Heifer, under 12 months.—1, R. A. Snowball.

Calf under 6 months—1, McCullough Bros.; 2, J. R. Jewett.

Herd, aged,—1, R. A. Snowball.

Young herd—John R. Jewett.

Bull and his get—1, R. A. Snowball.

Cow and two offspring—1, J. R. Jewett.

Bull, any age—1, R. A. Snowball.

Female, any age—1, R. A. Snowball.

Herefords

Aged bull—1, W. O'Brien & Sons.

Bull, two years—W. O'Brien & Sons.

Bull, under two years—W. O'Brien & Sons.

Bull, under 12 months—1, W. A. Pinkney, Melbourne; 2, James O'Brien.

Cow, four years old—1 and 2, James O'Brien; 3, W. O'Brien & Sons.

Cow, three years old—1, W. O'Brien & Sons; 2, and 3, Jas. O'Brien.

Cow or heifer, two years—1, W. O'Brien & Sons; 2, James O'Brien.

Heifer, under two years—1, W. O'Brien & Sons.

Heifer, under 18 months—1, W. O'Brien & Sons.

Heifer calf, under 12 months—1, James O'Brien; 2 and 3, O'Brien & Sons.

Heifer calf under 6 months.—1, J. O'Brien; 2, and 3, O'Brien & Sons.

Herd—1, O'Brien & Sons; 2, J. O'Brien.

Young herd—1, O'Brien & Sons; 2, James O'Brien.

Bull and his get—1, O'Brien & Sons.

Cow and two offspring—O'Brien & Sons.

Bull, any age.—1, O'Brien & Sons.

Female, any age.—1, O'Brien & Sons.

Polled Angus

Aged bull.—1, J. M. Laird & Son, P. E. I.

Bull, two years—1, A. G. Spafford, Compton, Que.

Bull, under two years.—1, J. M. Laird & Sons.

Bull, under 18 months—1, A. G. Spafford.

Bull calf, under 12 months.—1, J. M. Laird; 2, A. G. Spafford.

(Continued on Page 28)

Give children the benefit of modern ideas in underwear

Don't put old-style uncomfortable bothersome underwear on them. Watson's Children's Union Suits are made expressly for little folks' comfort and convenience.

They are snug fitting, neat and comfortable. Made according to the Klosed Krotch idea that the grown-ups esteem so highly.

The fabric? Spring Needle Rib—uniform, elastic, smoothly finished, good for wear.
Fit the youngsters out with

WATSON'S Klosed-Krotch COMBINATIONS

We also make Waists, Vests, Drawers, Bloomers and a full line of Infants' Goods in all fabrics.
Ask your dealer.

THE WATSON MFG. CO., LTD. 28
Brantford - Ontario

Suffering Women! Before Giving Up Altogether, Write Me!!

Listen, Women! All the physicking in the world won't put you right. What you need is a purely local treatment like "Orange Lily" and if I am so confident about it as to send you ten days' treatment, absolutely FREE, you will, I am sure, be interested enough to follow what I want to tell you.

I think we are all agreed that a perfect understanding of women's ills and a thorough sympathy with such cases cannot be expected from men, however wise and learned. Only someone who has actually gone through the experience can fully realize the sufferings of hundreds of thousands of our women to-day.

My own case taught me that the ailments to which we are subject, and from which so many of the women of Canada suffer, can be conquered, surely and finally. I endured almost beyond belief for years, and contracted a particularly obstinate condition because I neglected attending to my trouble, yet "Orange Lily" got to work at once and put me permanently right in a very short time.

Dosing and drenching the system with violent drugs is worse than useless; in fact, often aggravates the trouble. "Orange Lily" has a perfect action because it works right at the seat of the malady, leaving other organs to continue their functions undisturbed. You apply "Orange Lily" yourself in the privacy of your own home. No more humiliating "examinations" by prying doctors. No more embarrassing questionings. You use "Orange Lily" for ten days, free, at my expense, and the treatment doesn't interfere with your daily work.

Write me to-day, now, before you leave this page. In matters like this, delays are sometimes dangerous. Let me send this helpful free treatment at once. Address: Mrs. Frances E. Currah, Windsor, Ont.

The Charlottetown Exhibition.

(Continued from Page 23)

Albert Boswell, French Fort.

Plymouth Rock, buff, cock—1 and 2, W. W. Osborne.

Plymouth Rock, buff, hen—1 and 2, W. W. Osborne.

Rhode Island Red, S. C., cock—1, Arthur Nelson, Charlottetown; 2, and 3, Lou Pigott, Charlottetown.

Rhode Island Red, S.C., hen—1 and 2, Arthur Nelson; 3, Lou Pigott.

Wyandotte, white, cock—1 and 2, Joseph White, Charlottetown; 3, Wolfville Poultry Yards.

Wyandotte, white, hen—1 and 2, Joseph White; Wolftville Poultry Yards.

Wyandotte, buff, hen—1, William Beazley, Halifax, N. S.

Wyandotte, any other variety. cock—1, Wolfville Poultry Yards; 2, Geo. Lapthorne, Charlottetown.

Wyandotte, any other variety, hen—1, Wolfeville Poultry Yards; 2, George H. Lapthorne.

Plymouth Rock, white, hen—1 and 3, Spring Park Poultry Yards; 2, Mrs. Albert Boswell.

Rhode Island Red, S.C., cock—1, 2 and 3, Arthur Nelson, Charlottetown.

Rhode Island Red, S. C., hen—1, Arthur Nelson; 2, E. E. Griffin, Port Williams, Kings Co., N.S.

Rhode Island Red, R. C., cock—1, Arthur Nelson.

Rhode Island Red, R. C., hen—1, Arthur Nelson.

Spanish Black, cock—1, Donald Mc. Millan, Charlottetown.

Spanish Black, hen—1 and 2, Donald McMillan.

Wyandotte, silver laced, cock—1, George Cilton.

Wyandotte, silver laced, hen—1, George Cilton.

Wyandotte, white. cock—1, Wolfville Poultry Yards, Wolfville, N.S.; 2, Spring Park Poultry Yards; 3, Joseph White, Charlottetown.

Wyandotte, white. hen—1, Spring Park Poultry Yards; 2, Joseph White; 3, Evangeline Poultry Yards, Wolfville, N.S.

Wyandotte, buff, cock.—1, Wm. Beazley, N.S.

Wyandotte, buff hen—1, Robert J. Hudson, Charlottetown; 2. Wm. Beazley, Halifax. N. S.

Wyandotte, any other variety, hen—1, George H. Lapthorne; 2, Wolfville Poultry Yards.

CLASS 49—Breeding Pens

Pen of Leghorns—1, Evangeline Poultry Yards; 2, George Chilton.

Pen of Minorcas—1, Wm. J. Cudmore.

Pen of Orpingtons—1, Henry Gurney, East Royalty; 2, Arthur Nelson, Charlottetown.

Pen of Plymouth Rocks—1, Mrs. Albert Boswell.

Pen of Wyandottes—1, Spring Park Poultry Yards; 2, Evangeline Poultry Yards.

Pen of Rhode Island Reds—1, E. E. Griffin, Port Williams, Kings Co., N.S.; 2, Arthur Nelson, Charlottetown.

CLASS 50—Eggs.

For best 1 dozen Eggs from pure bred fowl most suitable for export—1, Wm. J. Cudmore, Charlottetown; 2, Charles Pippey, Mount Herbert; 3, Miss Louise Howard, Winsloe.

CLASS 51.—Turkeys, Geese and Ducks

Turkey, Bronze. male. over one year old—1, G. L. Hayden, Cherry Valley; 2, Mrs. Albert Boswell, French Fort.

Turkey, Bronze, female, over 1 year old—1, W. J. Pickard, West Royalty; 2. G. L. Hayden, Cherry Valley; 3, Mrs. Albert Boswell.

The Sydney Exhibition.

(Continued from Page 7)

Ewe, 2 years old—1 and 2, E. Hill, Pt. Edward.

Ewe, 1 year old,—1 and 2, E. Hill.

Cheviots

All prizes to Wilson Gillis.

Southdowns

Ram, 2 shears and over.—1, W. M. Hill, Pt. Edward; 2, J. Howard McKicham, Cleveland.

Ram shearling—1 and 2, W. M. Hill.

Ram lamb—1 and 2, W. M. Hill.

Ram lamb—1 and 2, W. M. Hill.

Ewe, 2 years and over—1, John McMullin; 2 and 3, W. M. Hill.

Ewe, 1 year old—1 and 2, W. M. Hill.

Ewe lamb—1 and 3, W. M. Hill; 2, John McMullin.

Best pens—1, W. M. Hill.

Shropshire

Ram, 2 shears and over—1, Murdo McKenzie.

Oxfords

McKenzie.

Ram, 2 shears and over—1, D. J. MacKenzie, Balls Creek.

Ram, shearling—1 and 2, E. J. Johnston.

Ram, lamb—1 and 2, E. J. Johnston.

Ewe, 2 years old—1, 2 and 3, E. J. Johnston.

Ewe shearling—1 and 2, E. J. Johnston.

Ewe, lamb—1, 2 and 3—E. J. Johnston.

Pen—E. J. Johnston.

Long Wool Grades

Ewe, 2 years old—1, John McKeigan, Mineral Rock; 2, Wilson Gillis; 3, Nelson Beaton.

Ewe, shearling—1 and 2, John McKeigan; 3, Wilson Gillis.

Ewe lamb—1 and 2, John McKeigan; 3, Nelson Beaton.

Pen—1, John McKeigan; 2, Wilson Gillis; 3, Nelson Beaton.

Medium Wool Grades

Ewe, 2 years old—1 and 3, E. J. Johnston; 2, D. J. McKeigan.

Ewe, shearling—1. E. J. Johnston; 2, John McMullin.

Ewe lamb—1, John McMullin; 2 and 3, D. J. McKenzie.

Pen—1, John McMullin; 2, D. J. McKeigan.

Common Sheep

Ewe, 2 years old—1 and 3, D. J. McKeigan; 2, Angus McDonald, Beechmont.

Ewe, 1 year old—1, Angus McDonald; 2, Nelson Beaton.

Ewe lamb—1, Angus McDonald; 2, H. G. Matheson; 3, Nelson Beaton.

Fat Sheep

Fat ewe—1, E. J. Johnston; 2 and 3, John McMullin.

Fat ewe lamb—1, H. G. Matheson; 2, John McMullin; 3, Nelson Beaton.

Fat wether lamb—1, H. G. Matheson; 2, John McMullin.

SWINE

Berkshires

Boar, 1 year old—1, D. R. Nicholson; 2, Geo. Oland.

Boar, under 1 year—1, Murdo McKenzie; 2, D. R. Nicholson.

Sow, 1 year old—1, D. R. Nicholson.

Sow, under 6 months—1, S. D. Gillis & Son; 2 and 3, D. R. Nicholson.

Sow and litter—1, Murdo McKenzie; 2, Geo. Oland.

Herd—D. R. Nicholson.

Yorkshires

Boar, 1 year old—1, John McQueen.

Boar, under 1 year—1 and 2, D. R. Nicholson; 3, Jas. Marnell.

Sow, over 6 months—1 and 2, D. R. Nicholson.

Sow under 6 months—1 and 2, John McQueen; 3, D .R. Nicholson.

Herd—D. R. Nichloson.

Chester Whites

All prizes to D R. Nicholson.

Grades and Crosses

Sow, 1 year old—1, Collin Collier.

Sow, over 6 months—1, M. W. J. MacKenzie; 2, Jas. Marnell.

Sow under 6 months—1, Colin Collier; 2, M. W. J. McKenzie; 3, Jas. Marnell.

Fat hog over 1 year—D. R. Nicholson.

Fat hog, under 1 year—1, Colin Collier; 2, Jas. Marnell.

NERVOUS DYSPEPSIA

For 11 years—Completely Cured by Dr. Cassel's Tablets
The Famous All-British Medicine.

Pain and Wind so Bad it Nearly Choked Her.

Palpitation, Faintness, and Extreme Nervousness

Was Very Thin and Anaemic.

Now in Splendid Health Through

Dr. Cassel's Tablets.

Those here in Canada suffering from Digestive or Nerve Troubles who read this true story cannot fail to get new hope from its perusal. Mrs. Rogers, of 243, Whitehall-road, Bristol, England, had suffered from acute dyspepsia for eleven years, ordinary treatment had failed to do her any good, yet Dr. Cassell's Tablets cured her completely. Could more convincing proof of the value of this great British medicine be offered? Mrs. Rogers says:—"Dr. Cassell's Tablets have cured me of dyspepsia that nothing I tried could even relieve, and I feel so pleased and grateful that I want to tell every sufferer about this wonderful medicine.

"It is quite eleven years since I first began to be troubled with pains and wind after food, and all that time I was never quite free from dypepsia. Of course, I was better sometimes, a little better that is, but never for long. Frequently I had frightful attacks of pain in my chest, and wind in such quantities that it almost choked me. My heart would palpitate until I went quite faint. I was very nervous, too, so nervous, in fact, that my husband actually stopped the clock because I could not bear the ticking.

"The result of all this suffering was that I became quite thin and anaemic, and so weak that if I tried to do my housework I simply fainted. I had to pay to have it done for me. Latterly I

could not get about the house without support, and I used to turn the broom upside down and use it as a sort of crutch. At night, I always had peppermint by my bedside to relieve the wind.

"Of course, I had treatment, I even attended an institution, but I got no better. They always told me to have my teeth out, and that I did not want to do, but when I got Dr. Cassell's Tablets, what a change! They relieved me almost at once, and as I peresvered with them all my pain, wind, heartache and other troubles gradually disappeared, and now I am in splendid health. I can eat any kind of food and am stronger than I have been for years. Certainly, I shall never cease to praise Dr. Cassell's Tablets."

SO BAD COULD NOT WORK.

Is Now Perfectly Cured.

The value of Dr. Cassell's Tablets to all who have to earn a living is well seen in the following true story. The teller of this story, Mr. Mendham, of 21 Princess Road, Old Fletton, Peterborough, England, had long been too ill to work, but now he is in steady employment, made well and strong by Dr. Cassell's Tablets. He says:

"I am glad to be able to testify to the wonderful curative power of Dr. Cassell's Tablets. They cured me

when nothing else I tried would, and enabled me to keep steadily at work. I had suffered for years from dyspepsia, sleeplessness, and bad nervous attacks. I could do nothing while these attacks were on, and they were so frequent that I was as much away from work as at it. I was always more or less ill, always had severe pain after food, with volumes of wind, and a dizzy sensation that I could not shake off. Headaches, too, were frequent and severe, and sometimes I had shivering turns like ague. I tried all sorts of things and had endless medicine, but it was only when I got Dr. Cassell's Tablets that I got any real benefit. It was really wonderful how they cured me. I got sleep at nights, could eat without suffering, and now I am in splendid health."

LARGEST SALE IN BRITAIN

Popularity Now World-Wide.

The aboslute authenticity of the foregoing cases are guaranteed, and no testimonial is ever published by the Dr. Cassell's Co., without full personal inquiry as to its genuineness. Purchasers of Dr. Cassell's Tablets in this country may rest assured that they are getting a really reliable and tested remedy for nervous breakdown, Nerve Failure, Infantile Weakness, Neurasthenia, Sleeplessness, Anaemia, Kidney Trouble, Dyspepsia, Stomach Disorder, Wasting, Palpitation; and they are specially valuable for nursing mothers and girls apporaching womanhood. All druggists and storekeepers throughout the Dominion sell Dr. Cassell's Tablets at 50 cents. People in outlying districts should keep Dr. Cassell's Tablets by them in case of emergency. A free sample will be sent on receipt of 5 cents for mailing and packing, by the Sole Agents for Canada, H. F. Ritchie and Co., Ltd., 10, McCaul-street, Toronto, Ont.

Field Roots

Best collection from any one farm—1, John McMillan; 2, Colin McRae; 3, D. R. Nicholson.

Best collection garden vegetables—1, Colin McRae; 2, John McMullin.

Best collection fruit—1, A. B. McPhee; 2, M. D. Curry, Grand Mina South; 3, C. A. Munn & Son.

D. D. McK. Special—Mrs. Wm. McKenzie.

J. E. Douglas Special—Mrs. D. R. Nicholson.

McCurdy & Co. Special—Mrs. D. R. Nicholson.

BUTTER AND CHEESE

Best crock or tub butter, 15 lbs.—1, Mrs. D. R. Nicholson; 2, H. G. Matheson; 3, Emily McMillan; 4, Mrs. J. B. Musgrove; 5, E. J. Johnston

Best butter in print, 5 lbs.—1, Mrs. Wm. McKenzie, Baddick Forks; 2, Mrs. D. R. Nicholson; 3, H. P. McKenzie; 4, H. G. Matheson; 5, E. J. Johnston.

Butter in glass jar (granulated).—1, H. P. McKenzie; 2, E. J. Johnston; 3, Mrs. Phil Gibbons, Mineral Rock.

Butter, fancy display—1, Mrs. D. R. Nicholson; 2, Mrs. H. A. Moffatt; 3, E. J. Johnston.

Highest scoring butter—Mrs. Wm. McKenzie.

POULTRY

Buff Cochins—H. W. Lovitt, 1 c.

White Wyandottes—Fred Jackson, 1 and 2 c, 3 h; F. E. Jackson, 2 c, 2 h, 1 and 2 r, 1 and 3 p; M. W. Ross & Son, 1 h; A. J. MacLeod, 2p.

Columbian Wyandottes—C. A. Munn & Son, 1 c.

Partridge Wyandottes—C. A. Munn & Son, 1 and 2 c, 1 and 3 h, 2 and 3, r, 2 and 3 p; L. S. Jackson, 2 h, 1 r, 1 p.

S. C. Rhode Island Reds—C. A. Munn & Son, 1 c, 1 and 2 h; C. W. Lovitt, 2 and 3 c, 3 h, 2 and 3 r, 1 and 2 p; A. J. MacLeod, 1 r, 1 p.

R. C. Rhode Island Reds—Chas. Johnston, 1 c, 1 p; R. W. Carmichael, 2 c, 1 h.

Single comb White Leghorns—Chas. Johnston, 1, 2 and 3 c; 1 and 2 h, 1, 2 and 3 r; 1 and 2 p; A. J. MacLeod, 3 h, 3 p.

R. C. White Leghorns—W. T. Matheson, 1 and 2 r, 1 and 2 p.

S. C. Brown Leghorns—Fred Jackson, 1 r, 1 p; M. W. Ross & Son, 2 r, 2 p.

R. C. Brown Leghorns—Chas. Johnston, 1 and 2 c.

S. C. Buff Leghorns—Carl Haase, 1 c, 1 and 2 h; J. A. MacKay, 1 r, 1 and 2 p; A. D. Reed, 2 and 3 r, 3 p.

Black Minorcas—M. W. Ross & Son, 1 c, 1,2 and 3 h; 1 and 2 r.

White Minorcas—M. W. Ross & Son, 1 and 2 c, 1, 2 and 3 h, 1 r, 1 p.

Buff Orpingtons—R. W. Carmichael, 1 and 2 p.

Hamburgs—M. W. Ross & Son, 1 and 2 c, 1, 2 and 3 h, 1, 2 and 3 r, 1, 2 and 3 p.

S. C. Mottled Anconas—M. W. Ross & Son, 1 and 2 c, 1, 2 and 3 h, 1 r, 3 p; T. C. Hull, 2 and 3 r, 1 and 2 p.

W. F. Spanish—M. W. Ross & Son, 1 c; H. W. Lovitt, 2 c, 1 h; B. A. Lewis, 1 and 2 p.

Game Bantams—M. W. Ross & Son, 1 c, 1, 2 and 3 h, 1, 2 and 3 r, 1, 2 and 3 p; H. W. Lovitt, 2 c.

Buff Cochin Bantams—C. W. Lovett, 1 and 2 h.

Black Cochin Bantams—C. W. Lovett, 1 and 2 h.

Black Cochin Bantams—C. W. Lovett, 1, 2 and 3 c, 1, 2 and 3 h, 1 r, 1 p.

Breeding Pens

Wyandottes—M. W. Ross & Son.

Rhode Island Reds—1, C. A. Munn & Son; 2, H. W. Lovett.

A. O. V.—1, A. J. McLeod.

Turkeys, bronze—H. G. Matheson, 1 c, 1 h; H. W. Lovett, 2 c, 2 h.

Geese, grey—1, Mrs. D. R. Nicholson; 2, Mrs. H. A. Moffatt.

Geese, A. O. V.—1, Melvin Moreshed.

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DUCKS

Pekin, male, sr.—1, Mrs. H. A. Moffatt.

Pekin male, jr.—1, A. J. MacLeod, 2, H. C. Musgrove; 3, John Nicholson.

Pekin, female, sr.—1, Mrs. H. A. Moffatt.

Pekin, female, jr.—1, John Nicholson; 2, A. J. MacLeod; 3, H. C. Musgrove.

Indian Runner male, sr.—1, D. N. Brodie; 2, Mrs. D. R. Nicholson.

Indian runner, male, jr.—1, Mrs. D. R. Nicholson; 2 and 3, A. K. Jackson.

Indian runner, female, sr.—1, D. N. Brodie; 2, Mrs. D. R. Nicholson.

Indian Runner, female, jr.—1, Mrs. D. R. Nicholson; 2 and 3, A. K. Jackson.

Pair Guinea fowls—1, Mathewson.

DREESED POULTRY

Pair fat fowls—1, E. J. Johnston; 2, Mrs. H. A. Moffatt.

Pair fat chickens—1, E. J. Johnston.

Pair fat ducks—1, A. K. Jackson.

EGGS

Heaviest and best dozen white.—1, M. W. Ross & Son; 2, Chas. Andrews; 3, A. J. MacLeod.

Heaviest and best dozen brown—1, R. B. Murray; 2, M. W. Ross & Son; 3, A. J. MacLeod.

Parasitic Diseases of Sheep.

Professor T. W. Cave, F.R.C.V.S., gave 'Some Veterinary Notes on Sheep" to the farmers assembled at the recent Sheep-Breeders' Conference at Wye, England, and alluded to what he described as 'something new in science." During the lambing season of 1914, a report was received at the college that a gentleman in East Kent was losing a considerable number of lambs which were born dead, and inquiry was suggested. As it was thought that it might be due to something in connection with the management of the ewes, his colleague, Mr. Garrad, visited the farm and made full inquiry. He was unable to discover that anything was wrong with the management, and the owner mentioned that he had opened a number of the lambs and found what he described as "spotted liver." Lambs were sent to the college. At this time sixty-four dead lambs had been produced by forty-eight Kent ewes, and eventually about 100 were lost. The first lamb arrived from the farm on March 6. It was well developed, and its lungs were found to be inflated, proving that it had at any rate breathed. The naval string was found to be perfectly fresh and unshrivelled, proving that the lamb had lived but a short period. The liver showed the presence of spots which resembled a diseased condition of the liver of other animals, both cattle and sheep, but of a greater age. It was a disease due to the presence in the liver of a special microbe known as the Bacillus necrosis. Whenever it grew in the tissue or organ it caused death of the surrounding tissue and the production of patches which were called areas of necrosis. It was at once seen that there was a considerable resemblance to the well-known necrosis of the liver and it was considered whether it could possibly be due to the same cause. He made inquiries in various parts of the country to know whether anything was known of such a thing happening in the unborn lamb. He searched through whatever literature was available, and could come across no evidence that such a thing had previously been recognized. The bacillus of necrosis was found in different situations in the domesticated animals, all of which appeared to be more or less susceptible to infection. It was distributed in soil, and especially in cultivated soil, and there they had the possibility of infection.

How Infection May Occur.

Natural infection might take place through the digestive organs and in this way some of the microbes might reach the liver. It was found in connection with poll evil and quitter, and in certain forms of ulceration of the intestines. Otherwise it might find its entrance through small wounds or abrasions. The same bacillus was found in connection with certain cases of foul in the foot in cattle, and in necrotic patches in the livers of both cattle and sheep and in calves and lambs as a form of navel-ill. In lambs affected with navel-ill abscesses were found in the liver, but in these the infection must have taken place after birth. In the cases under investigation the great point was that these lambs were evidently diseased for a considerable time before birth; they were stillborn in consequence of the diseased condition of the liver. It seemed that further investigation was desirable. The owner sent altogether ten lambs, and two of these came from another part. Out of the ten eight were found to be suffering from the bacillus of the liver; the other two were not affected, and that was the case also with the two from another farm. Some of the eight had never breathed, others had lived one or two days, but one had lived about a fortnight. In that case there was a rather peculiar condition. There were the same large patches on the liver, but there was also a very large number of smaller patches which suggested the possibility that the larger areas were caused before the birth of the lamb, and that then a second invasion took place from the umbilical vein. It was determined positively by microscopical examination that the well-known bacillus was present in the diseased patches of the liver, and cultures were prepared and the microbe grew in the characteristic manner. A test was also made by the inoculation of a ribbit, and as a result of all the investigations it was concluded that the loss of about 100 lambs, most of them still-born, was due to the presence of the bacillus in the liver, but no evidence could be obtained as to the origin of the disease. The origin in the case of the adult animal was perfectly simple—it in all probability invaded the body through the alimentary canal. In poll evil they would expect that the organism had got into the wound, but here the lambs were still unborn, enclosed in the womb which during the greater period of pregnancy was hermetically sealed, and as they had hitherto believed, it should not have reached the body of the lamb. The only route by which it could have done so would be through the circulation, and it was suspected that some of the ewes might be found to be diseased in a similar manner. It opened up a very large question. It was impossible to ask the owner to kill one after another, even if he were compensated, and so the investigation came to a full stop. His principal object in bringing the matter before the meeting was to show them the livers and the specimens exhibited, and to ask them to look for the presence of the disease in any new-born lambs they should come across. He wished them to mark the ewes giving birth to these lambs, and then to communicate with him and to send the lamb on for examination. In that way he might be able to trace the disease back to the ewe.

Tapeworm in Lambs.

The next disease dealt with by Professor Cave was tapeworm in lambs, for

(Continued on Page 34)

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A SILENT WORKER AND ALWAYS READY

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With our practising Chanter, costing $2 65 and an instruction book at 50c you'll soon learn to play the pipes Send for complete Bagpipe Catalog If interested in Band Work, ask for the famous "Besson" Instrument Catalog.

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FREDERICTON, N. B.

Order Your Butter Parchment from the Maritime Farmer, and get genuine stock.

Prize Winners at the Fredericton Exhibition.

(Continued from Page 25)

Bull calf under 6 months.—1, A. G. Spafford.

Cow, four years and up.—1, and 2, J. M. Lard; 3 and 4, A. G. Spafford.

Cow, three years old—1, J. M. Laird; 2 and 3, A. G. Spafford.

Cow or heifer, two years—1, J. M. Laird; 2 and 3, A. G. Spafford.

Heifer, under two years—1, J. M. Laird; 2, A. G. Spafford.

Heifer, under 18 months.—1 and 2, J. M. Laird; 3, A. G. Spafford.

Heifer calf under 12 months—1, A. G. Spafford.

Calf, under 6 months—1, J. M. Laird, 2, A. G. Spafford.

Herd—1, J. M. Laird; 2, A. G. Spafford.

Young herd—1, J. M. Laird; 2, A. G. Spafford.

Bull and his get—1, J. M. Lair.

Cow and two offspring—1, J. M. Laird; 2, A. G. Spafford.

Bull, any age, and cow, any age.—1, J. M. Laird.

Devons

The only herd shown in this class was that shown by W. S. Pinkney, of Melbourne, N.S., who- consequently captured all the awards.

Ayrshire

Aged bull—1, McIntyre Bros., Sussex; 2, Clover Nook Stock Farm.

Bull, 2 years—1, McIntyre Bros.

Bull under 18 months—1, McIntyre Bros.

Bull, under 12 months—1, McIntyre Bros.

Bull Calf—1, McIntyre Bros.

Cow, four years and up—1, and 2, McIntyre Bros.

Dry cow, four years and up—1, McIntyre Bros.

Cow, three years.—1, McIntyre Bros.

Dry Cow, three years—1, McIntyre Bros.

Cow, two years.—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Heifer under two years—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Heifer, under 18 months—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Heifer, 12 months—1, McIntyre Bros.; 2, Clover Nook Stock Farm.

Heifer calf—1, McIntyre Bros.

Breeders herd—1 and 2, McIntyre Bros.

Breeders' young herd—1, McIntyre Bros.

Bull and three of his get—McIntyre Bros.

Cow and two of offspring—1, McIntyre Bros.

Ayrshire Special

Four animals, get of one sire—1 and 2, McIntyre Bros.

Two animals, progeny of one cow.—1 and 2, McIntyre Bros.

Jerseys

Aged bull—1, H. S. Pipes & Sons, Amherst; 2, Cann Bros., Chegoggin; 3, Edwards and Alexander, Hillhurst.

Bull, two years—1, Edwards and Alexander; 2, H. S. Pipes.

Bull, under 18 months—1 and 2, Cann Bros.; 3. Fred Robinson; 4, Edwards and Alexander.

Bull calf—1, Edwards & Alexander; 2 and 3, H. S. Pipes.

Bull calf, under 6 months—1, Edwards & Alexander; 2, Cann Bros.; 3. H. S. Pipes.

Cow, four years old and upwards—1. Edwards & Alexander; 2, and 4, H. S. Pipes; 3, Cann Bros.

Dry cow, four years—1, Edwards & Alexander; 2, H. S. Pipes.

Cow, three years—1. Edwards & Alexander; 2, and 4, H. S. Pipes; 3, Cann Bros.

Dry cow, three years—1, Cann Bros.; 2, Edwards & Alexander.

Cow, two years—1 and 4, H. S. Pipes; 2, Edwards & Alexander; 3, Cann Bros.

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Heifer, under two years—1, H. S. Pipes; 2, Edwards & Alexander; 3. Cann Bros.; 4, Edwards & Alexander.

Heifer, under 18 months—1, Edwards and Alexander; 2, Cann Bros.; 3, and 4, H. S. Pipes.

Heifer, under 12 months—1, Edwards & Alexander; 2, and 3, H. S. Pipes; 4, Cann Bros.

Calf, under 6 months—1, Edwards & Alexander; 2, and 3, H. S. Pipes.

Herd—1, H. S. Pipes; 2, Edwards & Alexander; 3, Cann Bros.

Young herd—1, Edwards & Alexander; 2, and 4, H. S. Pipes; 3, Cann Bros.

Bull and three of his get—1. Edwards & Alexander; 2, Cann Bros.; 3, H. S. Pipes.

Cow and two of her offspring—1, H. S. Pipes; 2, Edwards & Alexander.

Guernsey

Aged bull—1, and 2, H. W. Corning, Chegoggin; 3, Hugh Dickson, Onslow; 4, R. R. Black.

Bull, under two years—1, Hugh Dickson.

Bull, under 18 months—Hugh Dickson.

Bull calf, under 12 months—H. W. Corning; 2 and 4, H. Dickson; 3, R. R. Black.

Bull calf under 6 months—1, H. Dickson; 2, H. W. Corning; 3, H. H. Black.

Cow, four years old and up—1, H. W. Corning, 1 and 3; 2, H. Dickson.

Dry cow, four years—1 and 3, H. Dickson; 2, H. W. Corning.

Cow, three years old—1, Hugh Dickson; 2, H. W. Corning.

Dry cow, three years old—1, H. Dickson; 2, H. W. Corning.

Cow, two years old—1, H. W. Corning; 2, H. Dickson.

Heifer under two years—1, H. W. Corning; 2, H. Dickson.

Heifer, under 18 months—1, H. Dickson; 2, H. W. Corning.

Heifer, under 12 months—1 and 2, H. Corning; 3, H. Dickson; 4, R. R. Black.

Calf, under 6 months—1, and 3, H. Corning; 2, H. Dickson.

Herd—1, H. Corning; 2, H. Dickson.

Young herd—1, H. Corning; 2, H. Dickson.

Bull and his get—1 and 2, H. Corning; 3, H. Dickson

Cow and two of her offspring—1, H. Dickson; 2, H. Corning.

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I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience,** we know better than any doctor; and thousands have proved there is **hope** even **for the hopeless** in my method of home treatment. If you suffer from **pain in the head, back,** or **bowels, feeling of weight** and **dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid,** to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured,** my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—**young or old.** To **Mothers** of **Daughters,** I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask** for the **free treatment to-day,** as you may not see this offer again. Address:

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Aged bull—1 and 2, Harding Bros., Welsford.

Bull, two years—1 and 2, Harding Bros.; 3, Harley Patterson, Nas'sis.

Bull, under two years—1 and 2, Harding Bros.

Bull calf under 6 months—1. Harding Bros.; 2 and 3, Clover Nook Stock Farm.

Cow four years and up—1 and 3, Harding Bros.; 2, Clover Nook Stock Farm.

Dry cow, four years—1 and 2, Harding Bros.

Cow, three years—1 and 2, Harding Bros.

Dry cow, three years—1 and 3, Harding Bros.

Cow, two years.—1, Clover Nook Stock Farm; 2 and 3, Harding Bros.

Heifer, under two years—1 and 3, Harding Bros.; 2, Clover Nook Stock Farm.

Heifer, under 18 months—1 and 2, Harding Bros.

Heifer, under 12 months—1, 2 and 4, Harding Bros.; 3, Clover Nook Stock Farm.

Heifer calf, under 6 months—1, 3 and 4, Harding Bros.; 2, Clover Nook Stock Farm.

Aged herd—1 and 2, Harding Bros.

Young herd—1 and 2, Harding Bros.

Bull and his get—1, Harding Bros.

Cow and two of her offspring—1, Harding Bros.

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Four calves bred by exhibitor—1 and 2. Harding Bros.

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Three animals, any age, progeny of any cow—1 and 2, Harding Bros.

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Bull, under two years—1, Hooper Bros.

Bull, under 18 months—1, Hooper Bros.

Bull, under 12 months—1, John Hooper; 2, Hooper Bros.

Bull, under 6 months—1, Hooper Bros.; 2, John Hooper.

Cow, four years and up—1, John Hooper; 2, Hooper Bros.

Dry cow, four years—1, John Hooper; 2, Hooper Bros.

Cow, three years old—1, Hooper Bros.

Dry cow, three years old—1, Hooper Bros.

Heifer, under two years—1, Hooper Bros.; 2, John Hooper.

Heifer, under 18 months—1, Hooper Bros.; 2, John Hooper.

Heifer, under 12 months—1, Hooper Bros.; 2, John Hooper.

Calf, under 6 months—1, Hooper Bros.; 2, John Hooper.

Herd—1, Hooper Bros.; 2, John Hooper.

Young herd—1, John Hooper; 2, Hooper Bros.

Dairy Grades

Cow, 4 years and up—1, R. R. Black, 2 and 3, W. B. Gilman, Fredericton; 4, Mrs. E. W. Darcus.

Dry cow, four years—1 and 2, R. R. Black; 3, Alphonse Kelly, City.

Cow, three years—1, W. B. Gilman; 2, Mrs. E. W. Darcus; 3, R. R. Black; 4, W. Illingworth, Hammondville.

Dry cow, three years—1, R. R. Black; 2, Mrs. E. W. Darcus.

Cow, two years—1 and 3, R. R. Black; 2, W. B. Gilman.

Heifer, two years—1, Mrs. E. W. Darcus; 2, R. R. Black.

Heifer, under two years—1, R. R. Black; 2, W. B. Gilman; 3, Dr. Cox, City.

Heifer, under 18 months—1, R. R. Black; 2, and 3, W. B. Gilman.

Heifer under 12 months—1 and 2, R. R. Black.

Heifer, under 6 months—1, W. B. Gilman; 2, and 3, R. R. Black.

Cow, any age—1, R. R. Black.

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Sow over one year and under two years—1, Shaw Bros.

Sow over six months and under one year.—1, Shaw Bros.; 2, A. C. Servant; 3, Fred Robinson.

Sow, under six months—1, A. C. Servant; 2, Shaw Bros.

Breeding sow with litter—1, Shaw Bros.

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Boar over 2 years—1, Clover Nook Stock Farm, Hartland.

Boar over six months and under one year—1, Clover Nook Stock Farm.

Boar under 6 months—Clover Nook Stock Farm.

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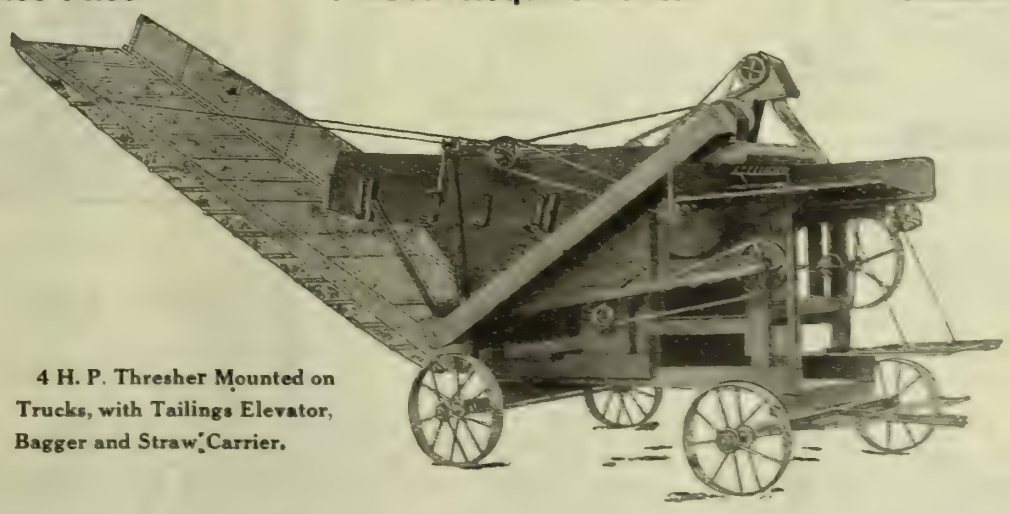

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Boar over six months and under one year—1, Roy Kitchen, Fredericton
Boar under 6 months—1, B. Goodspeed, Penniac; 2, W. H. Moore, Scotch Lake; 3, H. W. Corning.
Sow over 2 years—1, H. W. Corning; 2, W. H. Moore; 3, B. Goodspeed.
Sow over one year and under two years—1, H. W. Corning; 2, W. H. Moore.
Sow under 6 months—1, H. W. Corning; 2, B. Goodspeed; 3, W. H. Moore.
Breeding sow with litter—1, H. W. Corning; 2, B. Goodspeed.
Herd, boar with three females—1, H. W. Corning; 2, B. Goodspeed; 3, W. H. Moore.

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Boar over two years—1, A. C. Servant.
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Sow over one year and under two years—1, J. E. Baker & Sons.
Sow over six months and under one year—1, J. E. Baker & Sons.
Herd, boar and three females—1, J. E. Baker & Sons.

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Fat hog, largest and fattest—1, W. H. Moore; 2, Alphonso Kelly.
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Sow over one year and under two years—1, George Pugh, Nashwaaksis.
Sow, under six months—1, B. Goodspeed; 2, John R. Jewett, Macniquac; 3, John R. Jewett.
Breeding sow with litter—1. George L. Pugh; 2, Mrs. E. W. Darcus, Fredericton; 3, Fred Robinson, Fredericton.

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Cochins, Buff—Hen, 1, Walter Bennett.
Cochins, White—Cock, 1, Clover Nook Stock Farm.
Cochins, Partridge—Cock, 1, Walter Bennett; 2, C. H. Smyth, Moncton. Hen, Scott & Warren; 2, Walter Bennett; 3, C. H. Smyth.
Campines, Silver—Cock, 1, Hillside Poultry Yards. Hen, 1, Hillside Poultry Yards.
Dorkings, Grey—Cock, 1, Clover Nook Stock Farm; 2, Walter Bennett. Hen, 1, Hillside Poultry Yards; 2 and 3, Walter Bennett.
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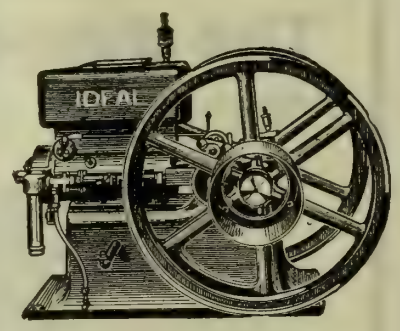

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Leghorns, white, R. C.—Cock—1, Walter Bailey, Fredericton; 2, Clover Nook Stock Farm; 3, Walter Bennett. Hen, 1, M. P. Supply Co.; 2, Walter Bailey; 3, Walter Bennett.

Leghorns, brown, R. C.—Cock, 1, Hen, 1, M. P. Supply Co.; 2, Walter Bailey; 3, Walter Bennett.

Leghorns, brown, R. C.—Cock, 1, Scott & Warren; 2, Roy Forbes, Gibson; 3, Donald McQuarrie, Fredericton. Hen, 1, Scott & Warren; 2, Clover Nook Stock Farm; 3, M. P. Supply Co.

Leghorn, buff, R. C.—Cock and hen, 1 and 2, M. P. Supply Co.

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Langshan, white—Hen, 1, Walter Bennett.

Minorcas, white, S.C.—Cock and hen, 1, Walter Bennett.

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Minorcas, Black, R. C.—Cock, 1, Hillside Poultry Yards. Hen, 1, Hillside Poultry Yards ;2, Clover Nook Stock Farm.

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Orpingtons, black—Cock, 1 and 2, Walter Bennett; 3, Scott & Warren. Hen, 1, Clover Nook Stock Farm; 2, Walter Bennett; 3, Scott & Warren.

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A. O. Variety—1, M. P. Supply Co.; 2, R. R. Black. Hen, 1, Hillside P. Yards; 2, M. P. Supply Co.; 3, R. R. Black.

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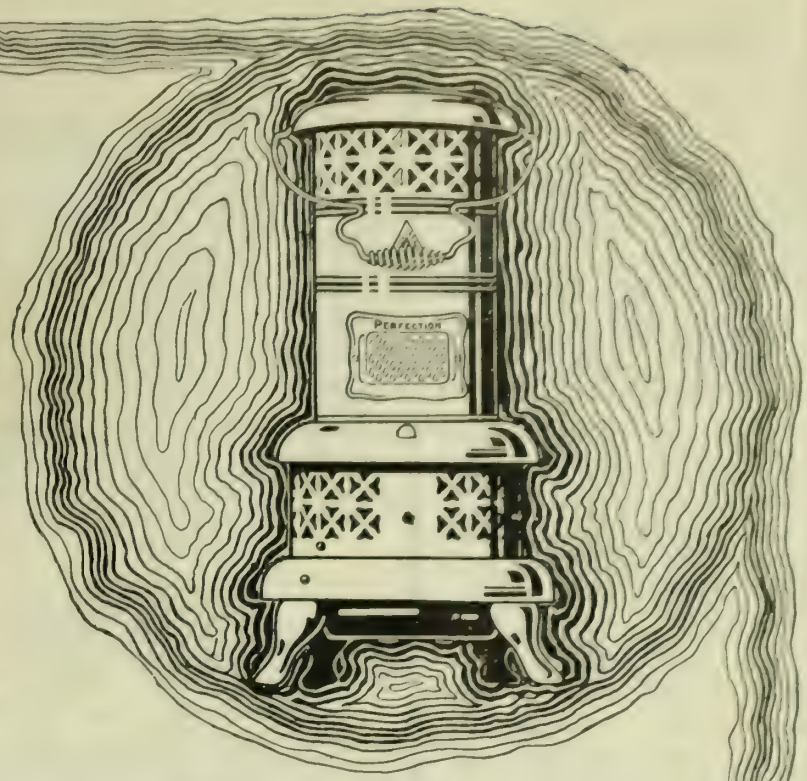

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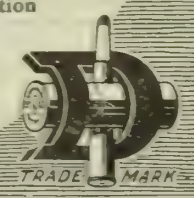

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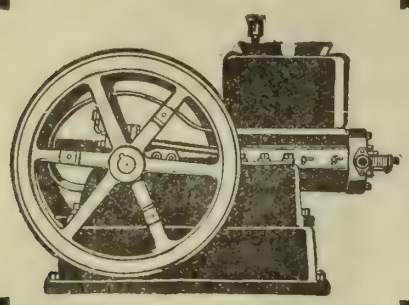

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Polands, Golden--Cock, 1, Walter Bennett. Hen, 1, Clover Nook Stock Farm; 2, and 3, Walter Bennett.

Polands, Golden Bearded—Hen, 1, Clover Nook Stock Farm; 2, Scott & Warren.

Polands, Silver cock—1, Walter Bennett. Hen, 1 and 2, Walter Bennett.

Polands, silver bearded—Hen, 1, Clover Nook Stock Farm.

Rhode Island Reds, S. C.,—Cock, 1 and 2, Thos. Kyle; 3, Hillside P. Yds. Hen, 1, Thos. Kyle; 2, B. Goodspeed, Penniac; 3, Hillside P. Yards.

Rhode Island Red, R. C.—Cock, 1, Scott and Warren; 2, and 3, M. P. Supply Co. Hen, 1 and 3, M. P. Supply Co.; 2, Scott & Warren.

Red Cap,—Cock and hen, 1, M. P. Suply Co.

Spanish White Faced Black—Cock, 1, Scott & Warren; 2, Walter Bennett.

Best dozen brown eggs—1, Mrs. Isaac Good, Kingsclear; 2, Hillside P. Yards; 3, B. Goodspeed.

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Brahmas, light—Cock and hen—1, C. H. Smyth.

Cochins, Buff—Cock and hen, 1, Hillside Poultry Yards.

Campines, Silver—Hen, 1 and 2, Hillside P. Yds.

Dorkings, grey—Cockerel, 1, Hillside P. Yds.; 2, Scott & Warren. Hen, 1, Scott & Warren: 2, Hillside P. Yds.

Games, Indian—Cock, 1 and 2, Walter Bennett; 3, Hillside P. Yds. Hen, 1, Hillside P. Yds.; 2 and 3, Walter Bennett.

Indian Games, white—Cock and hen, 1 and 2, Hillside P. Yards.

Games, Black Red—Hen, 1 and 2, Hillside Poultry Yds..

Games, Golden Duckwing—Cock, 1 and 2, Hillside P. Yds.

Houdans,—Cock and hen—1, Walter Bennett.

Hamburgs, Silver Spangled—Cock, 1, C. Kelly, Fredericton. Hen, 1, Scott & Warren; 2 and 3, C. Kelly.

Hamburgs, Golden pencilled—Hen, 1, Walter Bennett.

Hamburgs, Silver Pencilled—Cock and hen— 1, Walter Bennett.

Hamburgs, Black—Hen, 1, Walter Bennett.

Leghorns, White, S. C.—Cockerel, 1, Roy Forbes; 2, C. Kelly; 3, Walter Bennett. Hen, 1 and 2, J. N. Ferguson, Fredericton; 3, Lloyd Johnston, Fredericton.

Leghorns, brown, S.C.—Cock, 1 and 3, A. D. Gunter; 2, Scott & Warren. Hen 1, Scott & Warren; 2, Arthur Anderson, Fredericton.

Leghorn, Buff, S.C.—Cock and hen, 1, Scott & Warren; 2, Hillside P. Yds.

Leghorns, Black, S. C.—Cock and hen—1, Hillside P. Yds.

Leghorns, white, R. C.—Cock and hen, 1, 2 and 3, Walter Bailey.

Leghorns, Brown, R. C.—Cock 1, Geo. Lockhart, Fredericton; 2, Art. Anderson; 3, Scott & Warren. Hen, 1, Scott & Warren; 2, Geo. Lockhart.

Langshans, Black—Cock and hen, 1, C. H. Smyth, Moncton.

Minocras, Black, S. C.—Cock, 1, H. W. McMonagle; 2, Geo. Delong. Hen, 1 and 2, Geo. Delong; 3, Good. Jarvis, Fredericton.

Minorcas, Black, R. C.—Cock and hen, 1, Hillside P. Yds.

Orpingtons, Buff—Cock, 1, and 3, R. R. Black; 2, Walter Bennett. Hen, 1 and 2, R. R. Black; 3, Walter Bennett.

Orpingtons, white—Cock and hen, 1, R. R. Black.

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Plymouth Rocks. White—Cock, Mrs. Nelson Foster; 2, George Lockhart. Hen, 1, Walter Bennett; 2, Geo. Lockhart.

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Polands, Golden--Cock and hen—1, Walter Bennett.

Polands, Silver—Cock and hen, 1, Walter Bennett.

Rhode Island Reds, S. C.—Cock, 1, Thos. Kyle, Sussex; 2, Mrs. Fred Farrell, Fredericton; 3, Walter Bailey, Fredericton. Hen, 1, and 3, Thos. Kyle; 2, Hillside P. Yds.

Rhode Island Red, R. C.—Cock and hen—1, W. C. Jarvis.

Spanish White Faced—Cock, 1, Hillside P. Ydrs. Hen, 1 and 3, Scott & Warren; 2, Hillside P. Yds.

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Wyandottes(Silver Laced—Cock, 1, Mrs. E. Kyle; 2, Mrs. E. Kyle; 3, Hillside P. Yds. Hen, 1 and 3, Mrs. E. Kyle; 2, Hillside P. Yds.

Wyandottes, Golden Laced—Cock, 1 and 3, Mrs. Kyle; 2, Hillside P. Yds. Hen, 1, Hillside P. Yds.; 2 and 3, Mrs. Kyle.

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Any other variety—Cock and hen, 1, Hillside P. Yards; 2, R. R. Black.

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Black rose comb—Cock and hen—1, M. P. Supply Co.

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Cochins, Buff—Cock, 1, Walter Bennett; 2, C. H. Smyth. Hen, 1, M. P. Supply Co.; 2, C. H. Smyth; 3, Walter Bennett.

Black Red Game,—cock and hen, 1 and 2, Scott & Warren; 3, Roy Forbes.

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Games, Red Pile—Cock and hen, 1 and 2, Scott & Warren.

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Barred Rock fowls—1, W. H. Allen, Penniac.

Barred Rock chickens—1, Lloyd Johnston, Fredericton.

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White Wyandotte chicks—1, H. W. Grant, Marysville; 2, J. Stickles; 3, Harold Yerxa.

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Chickens—1, Thos. Kyle; 2, Hillside P. Yards; 3, Walter Bailey.

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Chicks—1, Scott & Warren; 2, Roy Forbes.

White Leghorn fowls—1, M. P. Supply Co.; 2, Walter Bennett; 3, Roy Forbes.

Chickens—1, Walter Bailey; 2, Geo. Delong; 3. Alex. Murray, Fredericton.

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In the big, essential points of range merit, the "Kootenay" excels. One of these is durability, which is ensured by our use of "ARMCO" rust-resisting iron for the body, and Semi-Steel for the firebox linings. Another is cooking quality. The "Kootenay" has always been famous in this respect, and with good reason. The nickelled steel oven is one factor, the scientific flue arrangement and oven ventilation are others.

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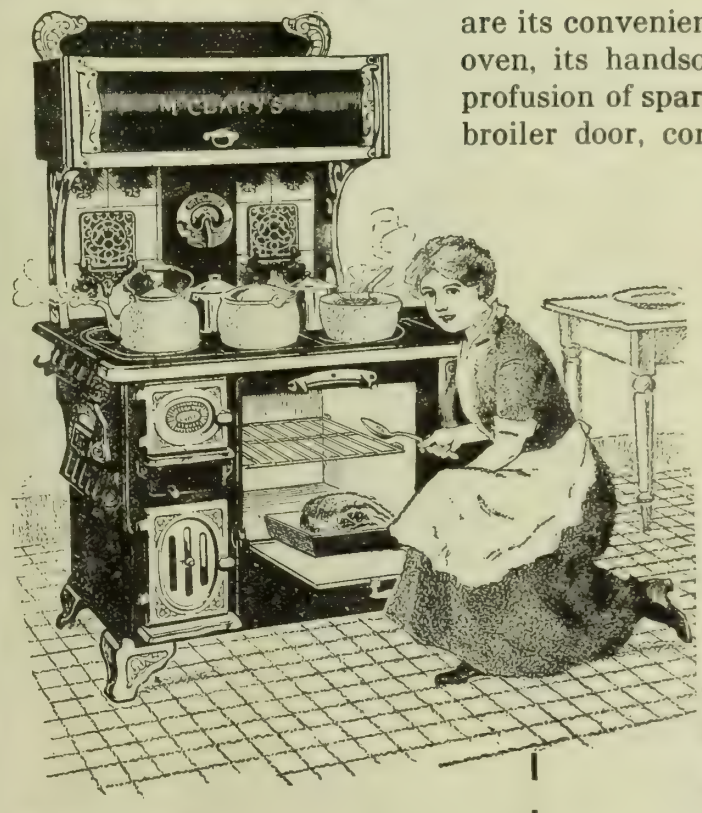

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We have two choice bred Shorthorn Bulls for sale six and seven months old

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"Hector," calved May 10, 1914,
Price $100.00

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WANTED.—Married man to work on farm by the year, must have good recommendations. MORRIS SCOVIL & SONS, Gagetown, N. B.

COLLIE PUP WANTED.—I want a good Collie pup of working strain Give full particulars in first letter. Address COLLIE care of MARITIME FARMER, Sussex, N. B.

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Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

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2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

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And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

Parasitic Diseases of Sheep.

(Continued from Page 27)

which he said one always looked in May and June especially in wet seasons. Tapeworms might appear in a flock in which none had been known to occur before, and he discussed how the infection might take place. It could not be believed that the eggs which were scattered on the ground continued to retain their vitality during the years in which no tapeworms were seen in the lambs, and his proposition was that in all probability the ewes themselves were the bearers and the hosts, though they showed no symptoms whatever of the infestation. They never saw an older sheep suffering from signs of illness due to the tapeworm, but it was quite possible—and he had proved it over and over again—that the sheep might have in their small gut one or two fully developed tapeworms and those were capable of breeding at an enormous rate. One might have 1,000 or 1,200 segments each capable of producing 40,000 eggs. Thus one infested ewe in a season favorable for the tapeworm—when there was much moisture —would be sufficient to spread disease over the whole flock of lambs. That suggested a line of treatment—to try as far as possible to rid the ewes of the tapeworms. He suggested that they should be dosed two or three times during the winter months with some tapeworm remedy, and that while the dose was acting on them it would be a good plan to put them on arable land or to fold them somewhere away from the old pasture in order that any parasites expelled might fall on ground from which eggs or young worms could not reach the sheep land. The young lambs as soon as they got on dry food, might be given daily small doses of common salt and sulphate of iron. This should be given in covered troughs so that it could not get wet, and where the plan was adopted he had every confidence that there would be much less trouble with the tapeworm disease in the lambing season, and that at the end of the summer the lambs would be in a far better condition.

(Continued in next issue.)

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I offer for immediate sale, the Gurnsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

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Phone West 374
South Bay and St. John, N. B.

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Desirable Farm on the St. John River to let for such term of years as may be agreed upon. The farm extends to 100 acres or thereby, capable of growing all kinds of crops and specially adapted to fruit growing. There is a splendid orchard of about 500 trees on the property

The house and buildings are commodious and suitable for the requirements of the place.

For further particulars apply to

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Volume 21. **SUSSEX, NEW BRUNSWICK, OCTOBER 26, 1915.** **Number 2.**

The Yarmouth County Exhibition

The Yarmouth County Exhibition again maintained the high reputation it has long since established of being one of the best, if not the best, shows, outside of the provincial exhibition at Halifax. Amongst the several factors that have given this exhibition its high reputation must first be the work of the managing committee, with Mr. E. G. Spinney as president, and Mr. Wm. Corning, the genial and indefatigable secretary. In the matter of weather, none better could be asked for, rather cold and windy, but fairly sunny; and weather makes a lot of difference in atttendance. But in spite of increased railway fares, and that fully 400 of our young men, who always are seen at the Exhibition, have enlisted, the number of admissions was very little below the best figures for any previous year.

Though there is always a variation in the size of different exhibits, this variation was more marked in special cases this year than noted previously. This was especially so in the case of fruit, flowers and some classes of the cattle show. A season of extremes in weather, very wet, or very dry, or very cold, resulted in much fruit dropping after blossoms had set. The high wind—unusually high and covering a period of several days—played havoc with the flower show. On the other hand, the show of vegetables was much larger than for many years. The grain and seed show was away ahead of anything seen here at any time, and there was a good butter show, though not so large as before. Whilst the exhibit of breads, preserves, and pickles was up to the average. Numerous articles of wearing apparel in the Department of Domestic Manufactures show that the manufacture of home made, hand made, goods is on the increase. Then the Corning, the Cann, and the Pinckney herds were all away at the Halifax, Fredericton and the Chatham shows. And yet there was a larger show of cattle owned by the small exhibitors than ever before. With a small showing of working oxen there never was a better showing of fat cattle and steers. Though there were but few exhibits in some classes of horses, other classes were more than full, so that all the new stalls added this year for horses were occupied. The show of sheep and swine was quite up to the average.

The poultry and show of pets was a honking, quacking, cackling joy-resort for the children; from the business standpoint of a grown-up there were many handsome birds of Plymouth Rock, Leghorn, Hamburgs, Silkies, with many Bantams, Pigeons, Hares, Rabbits and as specials, Guinea Pigs and a pair of handsome skunks with the "sting" removed.

Booths

In addition to places to exhibit special lines of goods, booths may add much to the general decoration scheme. Yarmouth is very fortunate in the matter of such booths, for Yarmouth exhibitors go in strongly for substantially built, well illuminated and artistically decorated booths. As it would be quite beyond the scope to describe them at all it must suffice to mention some of the larger and some of the more attractive ones. Amongst such would be Parker Eakin's booth, featuring the Robin Hood foodstuffs with free lunches and hot drinks for all. Albert Wagner's booth showing the Maritime Rug Co.'s rugs and mats; the Yarmouth Gas Co.'s booth displaying gas stoves, water heaters and burners, the whole a blaze of light. Then Porter & Robbins featured "reliab'e'l boots, shoes and everything in footwear. Dewolfe's booth with toothsome candies, made in Yarmouth; the Yarmouth Herald and the R. H. Davis booths with splendidly executed samples of the printers or bookbinders' art; W. N. Allan's booth with trunks, valises and ready to wear overcoats; E. H. Sinclair, representing W. F. Hatheway & Co., of St. John, in a neat booth, called attention to Tiger and other well known brands of tea; Royden Smith, with decorative wall papers; the Yarmouth Vulcanizing Co., of interest to autoists; these all had splendid looking booths and booth exhibits. In addition to these must be mentioned the booths for charitable purposes such as the one conducted by several Yarmouth young ladies to help the children's ward in the proposed new hospital, and the Local Council of Women's booth, in aid of Red Cross funds, decorated by and supplied with King Cole Tea and accessories free by the manufacturers. Other refreshment booths were those of Giarnon, Rozee, Churchill, Bower and the Kandy Kitchen, with similar booths without number outside.

The gateway Fish Company, a local concern, which though recently established, is pushing its fish wares, salted and smoked, way over to the war zone, had an appetizing exhibit in neat packages of all kinds of fish.

BARON'S OWN.

Champion Clydesdale Stallion at the Halifax Exhibition. Imported, owned and exhibited by R. A. Snowball, Chatham, N. B.

Skilled musicians, as well as Graphophones, pleased the large crowds who gathered in front of the piano and organ booths of N. H. Phinney & Co., Lawrencetown and of Messrs. Seavy & McNutt, of Yarmouth.

Automobiles were exhibited, a "Maxwell" by Smith, McKerson & Co., of Yarmouth, an "Overland" by Geo. E. Burrows, Yarmouth, a "Studebaker Six" by A. L. Pelton, of Kentville, and an "Oakland," from Gavel's Garage, Digby. These with a handsome "Dodge Bros." car, handled by the Empire Garage & Motor Co., a new car for these parts and a new concern in Yarmouth with a fine up-to-date reinforced concrete, two storey fire proof building, the finest in the Maritime Provinces, complete the autos.

Then there were the large exhibit of stoves, home made, exhibited by the new Burril Johnson Iron Co., and McClary's ranges, famous all over Canada, shown by Alex. Ross.

Only three varieties of separators were conspicuous, the Melotte, the DeLaval and the Sharples, who also had useful farm utensils and machinery on view.

In Machinery Hall, in addition to the autos mentioned, our old friend Chas O'Hanley, had his usually fine display of Bridgeport motors, lobster hoists, and gas engine accessories; T. P. Stubbert with a stationary 6-H.P. engine and truck scales, made by the Renfrew Machinery Co.; Frank Cox with carriages, ox yokes, and a sleigh all of his own make.

The Flower Show, originated, developed and in charge of Mrs. Chas. R. Kelley, made as good a showing as wind and weather of previous days made possible. There were some fine exhibits of colei, begonias, ferns, dahlias, stock, sweet peas, nasturtiums and collective exhibits. Amongst the chief prize winners were Mr. C. W. Durland and Trask & Shand, professionals; and Dr. I. M. Lovitt, Mrs. Henry Burrill, Vera Porter, Jenette Porter and Mrs. Gilbert Allen, amateurs.

Fine Arts and Fancy Work

Both of these booths were crowded with eager and interested sightseers the whole three days of the fair. The quality and quantity of fancy work was never greater nor higher. There was a profusion of sofa cushions. Irish crochet work, centrepieces, bureau scarves, night gowns, and lingerie, a most bewildering display of exquisite embroidery. In the adjoining booth there was a varied collection of curios on the tables consisting of checker boards, hand painted china, tooled leather, coins, designs for wall paper, cards, etc., and a unique miniature auto. The display of drawing and painting while not so large as for previous years, was wide in the range of subjects, treated and excellent in quality.

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Third Annual Convention of the N. B. Womens Institutes.

MISS HAZEL E. WINTER

Superintendent of Women's Institutes for the Province of New Brunswick.

Never has a more earnest, sympathetic, enthusiastic and courageous body of women assembled together to discuss improved home and civic conditions as gathered together in the Assembly Hall of the Provincial Normal School, Fredericton, the evening of October 5th, for the opening session of the New Brunswick Women's Institutes Third Annual Convention.

It was a pleasing sight to watch the quick movements of the knitting needles during the entire meetings, and they seemed indeed a fitting accompaniment to the vocal solos and patriotic songs rendered frequently at the sessions.

It takes more than rain to keep the members of the Women's Institutes away from a meeting. In spite of the heavy shower the night of the first session, at least one hundred delegates were present, and their reward for venturing out a rainy evening, was ideal weather during the remaining days of the Convention.

Would it were possible to give in full the well prepared papers and educative addresses. Each and every subject on the programme was so ably handled by those taking part, that the Institutes are sure to be benefitted accordingly. Note-books and pencils are continually kept busy and at the closing session it was unanimously declared that the 1915 Convention was the banner one.

In part, the most helpful papers and addresses are as follows:

The address of welcome was creditably given by Mrs. J. J. Colter, of Fredericton, who extended greetings from the various women's organizations in Fredericton, and congratulated the Women's Institutes on the noble work which was so well recognized by the people of New Brunswick.

Mrs. James Porter, of Andover, president of the first Institute organized in New Brunswick and known as the "Mother of the New Brunswick Women's Institutes" expressed in her charming way the reply to the address of welcome.

The Minister of Agriculture, Hon. James A. Murray, on account of pressing business matters, was unable to be present, but Hon. George J. Clark, New Brunswick's premier was an excellent substitute and his few remarks were much welcomed by the delegates.

One of the ablest orators to address a Women's Institute assembly, or any other assembly for that matter, was Mrs. Laura Rose Stephen, of Huntingdon, Quebec. Mrs. Stephen has travelled from coast to coast. Her ability as a public speaker and her wide range of present day affairs has placed her in the front rank of Institute workers. She endeared herself to every member present, and in her earnest, fascinating manner did full justice to the addresses on "Patriotism and Production relating to the Home," "My knowledge of Women's Institutes," and "The Influence of Environment," the former of which was given as follows:

"O beautiful and grand
My own, my native land,
Of thee I boast;
Great Empire of the West,
The dearest and the best,
Made up of all the rest,
I love thee most."

"These words express the truest of patriotism. The word patriotic is derived from the Greek pater, meaning father and the definiation of the word is one who truly loves and serves the fatherland.

"The love of country is the strongest passion in man. It is more powerful than reason itself. Our country is the common parent of us all, that spot to which our heart is bound. There is a divineness in true patriotism. Truly it is a God given instinct, for if we care not for our country, if we are indifferent to its welfare, and too cowardly to stand up for its defence, we may lose all, land, home, loved ones, friends, and become wanderers on the face of the globe or slaves to a tyrant.

"More than maiden, more than wife. more than children, more than life, has a true man to love his country. When danger threatens the land he has to leave all and cheerfully answer the call to serve, and the patriotic wife dauntless sacrificing spirit is portrayed when she says: "Had I a dozen sons each in my love alike, I had rather have eleven die nobly for their country, than one voluptuously surfeit, out of action.' And just here I would like to say the only people who have made any sacrifice worth noting are they who have given of their own flesh and blood. We have given of our time and means, but have we made any sacrifice in the war in so doing. We dress as well and our tables are as laden with good things and our sleep as unbroken as of yore. We cannot say the war has penetrated into our ranks and yet I mistake the calibre of our people if I judge them not ready to meet any demands that a country in distress may exact of them, and that brings me to the highest standard of patriotism. By marching unasked to the aid of the oppressed and down trodden, have we not shown that our country is the world. Our countrymen are all mankind. There are no points of the compass on the chart of true patriotism. The brave love mercy and delight to save. It is this spirit that prevades the armies of the allies and which will bring victory to our cause, for war will never yield but to the principles of universal justice and love. Our wish to conquer is but to save.

"As the ranks are broken, standing ready there are those to step in and fill gaps. And so it shall be to the end. Our men are too truly great to see a cause so just and necessary falter or fail for want of help, and when our country's own peril is considered where is the coward who would not dare to fight for such a land. We have had many occasions during the past months of being proud of the achievements of our boys at the front. Their truest bravery has been often shown by performing without witness what one might only be capable of doing before all the world.

"Those of our kith or kind who have fallen in active service or lanquished on beds of sickness, for sometimes it takes more bravery to live than die, whether our boys sleep the long sleep in an unknown grave, or come back to us sightless or crippled or broken in health they have fought the good fight. They have shown the greatest of patriotism and we owe them more than tongue can tell.

"And those who have said good-bye to husband, brother, or lover, you too have acted nobly. If sorrow has come to you, we grieve with you in your sorrow, and at all times we sympathize with you in your constant anxiety.

"The women of our land and especially the women of our Institutes have risen in all their womanliness and shown themselves to be true mothers in Israel. They are bravely and industriously doing duty on home guard, knitting, sewing, making jams, and jellies, by every way and means raising money to swell the Red Cross and Patriotic funds. It would almost seem that the Institute had been created to meet this strenuous unprecedented crisis. The amount of work this organization has done is simply stupendous. The Institutes of Ontario alone have raised over Thirty Thousand Dollars, and sent thousands of bales of goods to the hospitals and to the solider in active service. This is the highest form of home production, for this work has largely been accomplished by the hard working wives and daughters throughout our land. Women have told me that the only way they could get their soldier socks made was by rising an hour earlier to knit and sitting up an hour later.

"It is encumbent on us that we should give. To give we must have, to have we must save, to save we must be economical. Cicero said, economy is a great revenue. As a nation we were becoming spendthrifts. Extravagant in our dress, our house furnishing, our table. Bringing up our children in the lap of luxury, running to excess in everything and now suddenly there has come the cry to halt, and it is going to be to our material and physical, and shall I add, spiritual, good. Nothing lovelier can be found in woman than to study household good, and certainly the faces of many of our girls have been turned from the parlor back to the kitchen. One of our productions of this present war is the making of cooks. Why even the homely art of porridge making was becoming lost. The breakfast food was taken already prepared from the package. But that is a very dear method of supplying the table and so the good old-fashioned pot of oatmeal porridge is to be found on the stove, and by the way, do many of you ladies make rolled wheat porridge, it is such a wholesome, pleasant change from the rolled oats. When I go into the farm homes it always hurts me to find fresh bakers bread on the table. Someway we don't look for that. We know that lack of help and the constantly added luxuries make bread making a seeming burden. But it is a calamity for nothing can take the place of the good home product. It gives better digestion and more strength and it is one-third cheaper to bake than to buy bread. I would welcome the day when the bulk of our bread could again be of home production. The best test of good times is the dinner on the table at noon, and if there be large plates of flakey home-made bread, the times are not out of joint in that home at least.

"The most expensive way to live is to furnish food from the bake shop, the package and the tin can. The home should be as much as possible self-sustaining. That is the reason why Germany is holding out so successfully, she has everything within her own borders and since the war has a most frugal, industrious, well trained people, large cooking schools have been established for German housewives to learn to make the very best use of cheap food materials. Nothing is allowed to go to waste, every scrap of cloth is utilized, even old kid gloves used as lining for clothing. In England the formation of a woman's thrift league is contemplated, to give instruction in all domestic matters so as to get the most from the least expenditure. The Ontario government issued a pamphlet on the best foods to buy during the war, and how to secure the highest nutritive value at the lowest cost. Food principles were given with a list of the cheapest and best vegetable and animal foods. Also recipes selected for their nutritive value. We cater too much to what we like and not enough to what is good for us. We are like the small boy who said he would rather eat what he'd rather. A most wholesome dish is made from boiling for a day whole wheat, which has been soaked over night. It is eaten hot with cream or milk and sugar. This is called frumity, tastes good and makes a perfectly balanced ration.

"Grandmother cured bacon, made cheese, sugar and syrup, dried fruits, wove cloth from necessity and love. What was then done in the home for love is now done in factories for gain and the object is not so much for quality as for big profits.

"Home production was a source of great pride and pleasure to the past generation and war times are going to bring about a revival of good home products.

"The making of garments in the home, even the children's clothes, is fast growing out of fashion. The excuse is ready-mades are so cheap. They are cheap, that we will admit, but how often the quality is poor and the workmanship indifferent. A well made home article outlasts two ready-mades.

"There is another feature of the ready-mades which should be emphasized. Invariably they are bought from catalogues and the money is sent out of the district. The mail-order system is ruining many a country town which otherwise would flourish. The big cry has been "Buy Canadian made goods," and I would add "Buy them in your home town stores." Nothing will give home production such a stimulus as being loyal to home trade.

"I have six living brothers. When they were small my mother made their little coats and pants from the discarded grown ups clothes, and how they did wear, for the cloth in them was far better than one would feel like buying. This home production is one worth trying and will be a great saving.

"I would not be true to my special hobby if I did not bring in the garden as one of the greatest assets to a home. The value of a good garden can hardly be over-estimated. To have an abundance of fresh fruits and vegetables of one's own raising is reducing the cost of living one half. The tables are better supplied. The family's health is better, the doctor's bills fewer, and the pleasures of living increased. The lover of a garden lives a fuller, sweeter life than one who has no taste for such. Becoming a coworker with the Creator of all things, watching day by day the wonderful mystery of the seed developing into

the full grown plant, working in an atmosphere redulent with the perfume of flowers, and thrilling with the song of birds, truly this is getting the best from life. Everybody to reduce the cost of living and add a new interest to life should cultivate a piece of ground. While our men fight, while financial conditions are strained, and purse strings have to be drawn tighter, women can help work the land and create a new and greater wealth than has hitherto been dreamt of.

"The time has come when everyone from the geratest to the least must economize, the rich, they may help the poor. The fate of the world lies largely in the hands of the women. The nation must save, the women, the housewives must see to it that the nation does save. There is a great and splendid part for them to play. The wife of the working man has perhaps the greatest problem to face these days. In addition to raising children and manging the home she must spend her share of her husband's earnings. Here is the rock on which many come to grief. The science of buying is an important but unfortunately a neglected one. The main principles of economy must be learned and the true value of things understood. The housewife should have the strength of character to withstand the lure of the bargain counter and buy only what is really useful and necessary. Earl Gray says the future of our country lies in the hands of the mothers and teachers and this brings me to the last point of my talk. The greatest, the best production of our homes are the boys and girls in them. The over-whelming mystery of life is not death but birth. The chief reason for setting the social house in order for suppressing wrong, for safe-guarding all that is true and beautiful is to make ready for the coming of the little child. The most important person in society is not the man in the last year of the professional school, but the little child, who by his surroundings is being crippled or set free. The golden years of a child lies at the very beginning and the deepest education is imparted in the light of dawn.

"If Canada is to hold this high place the destinies have set apart for her, the homes of Canada must produce sons and daughters worthy of such an heritage, healthy, honest, sober, educated, industrious, economical, worthy children of worthy parents. No greater gift can the home give to her country than a family of good children.

The Institute must stand for all that is good. We must safe-guard our children from evil and I will welcome the day when, as a body of workers the Institute members come out boldly on the temperance question and say, 'For the protection of our homes, the saloons must go.' The mothers and fathers have a tremendous responsibility resting on them. And I would that more honor and notice were bestowed upon the fathers. A mother is loved, but a good father is adored by his children. The parents should stand side by side, the father taking his equal share with the mother in guiding in the right path the most precious product of the home—the boys and girls.

"We must be true ourselves if we wish to be helpful to those around us, and this is the ideal I leave wtih each of you in closing:

'I would be true for there are those who trust me
I would be pure for there are those who care,
I would be strong for there is much to suffer;
I would be brave, for there is much to dare;
I would be friend to all—the foe—the friendless;
I would be giving and forget the gift;
I would be humble, for I know my weakness;
I would look up—and laugh and love, and lift.'"

The demonstration on "Dressmaking," by Miss Annie Martin, of Fredericton, and on "Millinery," by Miss Corkum, of Miss Morgan's Millinery Establishment, Fredericton, were heartily received by their large audiences, and so quickly passed the time allowed for these practical talks and demonstrations it was with regret they had to be discontinued for other subjects on the programme.

The chief points Miss Hazel E. Winter, the supervisor, touched upon in her report of the year's work, included: the growth of the Institutes and membership in New Brunswick, the benefits resulting from the Institute, the annual short courses, traveling library at the disposal of the Institutes, the part our Institutes are playing in this world-wide war and the responsibility still resting upon the shoulders of the members, the methods adopted by the Institutes to swell funds and the numerous ways in which this money was expended, some of the ways the department has throughout the year expended the Women's Institute appropriation, and lastly the results of the co-operative efforts on the part of the members to improve their branches in every way possible.

Mrs. G. C. VanWart, Regent Provincial Chapter Daughters of the Empire, illustrated her talk on "Comforts for the Soldiers," showing samples of garments made up. Many practical hints were given on improvements in garments now being sent to the soldiers, and the ones to be needed the most during the winter campaign. Mrs. VanWart's closing words were, "In conclusion let me remind you that socks are the greatest need, so when in doubt, knit socks."

The Canadian Home Journal is the Women's Institute official organ throughout Canada, and the helpful address as given by Mr. J. Leslie Rook, of Toronto, who is closely asociated with this Journal, can only result in there being a more general co-operation between the Women's Institutes of New Brunswick and their faithful friend the Journal.

Dr. H. V. B. Bridges, principal provincial Normal School, gave an address on "Books and Pictures in the Child's Education." In order to pass this helpful address on to others it will be fully published in the 3rd Annual Report of the New Brunswick Women's Institutes.

The Women's Institutes have a splendid opportunity to encourage and assist in "School Gardening" if they carefully follow out the suggestions as given by Mr. R. P. Steeves, Director of Elementary Agricultural Education in his address on that subject.

Methods of combating with that terrible disease—the white plague—and the necessary precautions to take if once it is in one's household, was possibly the most instructive address of the Convention. Dr. Townsend, Superintendent of River Glade Sanitarium, illustrated his address with lantern slides, showing the different stages of the disease, the improper and proper surroundings, and the building at River Glade Sanitarium where the patient is taught to look after his own case and to precent the spreading of the disease.

The following resolution was unanimously passed at Thursday morning's session. "Resolved that the Women's Institutes of New Brunswick place before the provincial government the need of one or more women on the Provincial Board of Health, also on the city and county boards.

The Countess of Ashburnham and Mrs. Havelock Coy, both of Fredericton, were heard to advantage in patriotic addresses. It is regrettable that space will not permit giving in full the earnest appeals of these ladies. Every heart in the audience was deeply touched and the women could not help but return to their homes with a deeper understanding and a broader conception of their duties to the British Empire.

Mrs. Laura J. Winter, who is well known to the majority of Institute workers in our Province, with her experience as a trained nurse, gave the following address which it would be well for every mother to read:

"The Home Emergency Chest."

"In any walk of life, to be cool-headed and calm in emergency, is essential to success. And nowhere are these needed as much as in the sick room or cases of accident.

"If, when an emergency arises, one has to look for things to work with, one becomes excited and loses much valuable time, so to have things prepared at hand overcomes this difficulty.

"Home-making is the business of all the ladies here this evening To be a home-maker is the natural sphere of woman. It is her highest calling, so let us think of it in the right way and prepare with the purpose of being contented only with the best. Also bear in mind that among our most successful homemakers we have a goodly number of unmarried women.

"To be successful in this walk of life we must know at least something of a great many things. A homekeeper not only needs to know housekeeping, such as the routine work of any house, but must also be a cook, seamstress, nurse, teacher and decorator, and so to be able to fulfill all these duties, we must have a place for everything and have all things in their place.

"I have been asked to tell you something of the Home Emergency Chest, which chest is supposed to contain medicine. The chest I have with me is home made and as you see can be readily manufactured out of a Surprise soap box. I show you this so each one will know how easy it is to have a proper case in the home for the simple remedies needed.

(1) "Do not fill your chest with half emptied prescription bottles, or anything you have been using in case of severe illness. Throw all such away.

(2) "Have your bottles and cans marked plainly. A good way of labelling is to use narrow strips of adhesive, place on bottle or can and mark the name of contents with pen and ink. If any bottle contains poison put extra label on with the word POISON written in red ink.

(3) "When pouring medicine from a bottle always remember to pour from the side opposite the label, then your bottle will be neat and clean, and your label will stay in place.

Contents of Chest.

(1) "Pure alcohol. Never use wood alcohol near a patient. It is very injurious to the eyes and a small amount may cause blindness. pure alcohol is used for bathing the head to relieve pain. For the bath when used for fever bath, the evaporation is more rapid because it is more cooling. It is used always in the care of the back of a bed patient, either in the pure form or diluted half with water. Also a mild disinfectant.

(2) "Witch Hazel.—Good to bathe tired head and eyes, very restful. It is also good for the complexion, helps to close large pores in the skin.

(3) "Peroxide, very valuable. Used in cases of cuts and bruises of any kind, diluted one-half for children. It causes no unpleasantness when applied and is very cleansing. Used for mouth wash in a diluted form. If the teeth need special attention, powdered pumice mixed with a little peroxide makes them clean and white.

(4) "Listerine is another good mouth wash, but not necessary for the medicine chest.

(5) "Boracic acid powder solution, made of one teaspoon of the powder to one pint of boiling water. Bottle this and it is ready for use. Most frequently used for children's mouth and eyes, but is also good in cases of bruises, applied as a hot fomentation.

(6) "Castor oil. This is necessary in every house as a laxative for children and elder people. It is also used in the treatment of bed sores. Where a bed patient shows signs of bed sores by any redness of the skin, rub well with castor oil to the part daily after bathing with alcohol. It is a simple but very effective remedy. A bed sore is the breaking down of the tissues which only needs to be built up. To prevent a bed sore, and they are not necessary, keep your patient perfectly clean, the bedding clean, free from wrinkles and the bed free from crumbs. Rub the back at least three times a day with alcohol.

(7) "Olive oil. Used for either medicine or food.

(8) Carron oil. Equal parts of lime water and olive oil. Best remedy in burns or scalds. Never put water on a burn, cover the surface as quickly as possible from the air by applying some oily substance. Soak a piece of absorbent cotton thoroughly and bandage on the part, changing the bandage every few hours. After a few days leave off the oil and apply an ointment which the doctor will order. By this method there will be no scar.

(9) "Saratoga ointment. Is very nice for children. Can be had from any drug store.

(10) "Vaseline, (small jar).—Fine when you have a bad cold in the head. Apply to the bridge of the nose and forehead at night.

(11) Glycerine, (small bottle.)

(12) "Baking soda, small can. If you have sensitive teeth, wash with soda.

(13) "Mustard and flour in separate cans. For mild poultice, use three parts flour to one of mustard. For a child, add one ounce of glycerine or white of egg to prevent a blister. Is also used in the foot bath, and for a severe headache, by putting a poultice at the back of the neck, or pit of the stomach. A foot bath will also often relieve the pain.

(14) "Epsom salts. Outside of being a good laxative, it is effective in the bath in cases of rheumatism. In preparing a dose of salts, dissolve it in a small quantity of boiling water, filling the glass to the top with cold water. This makes it less disagreeable to take. It is well for those who cannot take Epsom salts to have a small package of Rochelle salts on hand.

(5) "Antifligistine. Can be used for any purpose in which a poultice is applied, especially in pneumonia and pleurisy. Easy of application. Place can in boiling water with cover off—till hot—spread on old cottton with knife and apply directly to the part. Will often relieve sore throat and croup.

(16) Small bottle of Iodine.

(17) Roches Embrocation for whooping cough. Apply as directed.

18) Roller bandages.

(19) Triangular bandages.

(20) Adhesive plaster.

(21) Cheese cloth.

(22) Absorbent cotton.

(23) Old linen and cotton, clean: with all seams, bindings, buttons, etc., cut off.

"It is well to have a little spirits of camphor or smelling salts.

Subjects relating to the Institute organization were classed under six headings, each member devoting five minutes to her subject. These short addresses, together with the Question Box and the many reports from the different institutes contained much useful knowledge for the promotion of Institute work. The short talks consisted of: "Interesting the Girls in the Institute," by Mrs. W. P. Fowler, of Hamomndvale: "Benefits of Roll-Call," by Mrs. A. A. Lewin, of Welsford; "Connecting Links between Home, School and Institute," by Miss Bessie Fraser, of Grand Falls; "Village Improvement Work," by Mrs. Her-

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THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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OCTOBER 26, 1915.

DATES OF ISSUE.

November 9-23
December 7-21
January 11-25

FOR A MARITIME AGRICULTURAL COLLEGE.

A recent communication issued by the St. John Board of Trade says:—"Pressure is being brought to bear on the Government to provide the Northern part of the province with an Agricultural College. The Minister of Agriculture has promised the Newcastle Board of Trade that a College would be built on the North Shore as soon as possible, perhaps next year."

We have heard this question mooted on several occasions and we have also heard Honorable Dr. Landry, the Provincial Secretary and Honorable Jas. A. Murray, Minister for Agriculture, commit themselves at more than one public meeting to the policy of a multiplicity of Agricultural Schools for New Brunswick.

The Maritime Farmer contended in the days of the Liberal Administration and still contends under the Conservative regieme that the sane policy for New Brunswick and Prince Edward Island re agricultural Education would be to join in with Nova Scotia in the maintenance of one Agricultural College for the three provinces. Then with such an appreciable increase in finances instead of putting on only a two-year course at the N. S. A. C. (which name by the way could be changed to the Maritime Agricultural College) as at present, a four-year course could be instituted. This would necessitate an increase in the teaching staff of that already famous and efficient institution. These teachers could be used to good advantage in conducting research work in the three provinces during the season when they would not be bdsily engaged at the college.

Nova Scotia is achieving results with her Agricultural Education policy. The results are far reaching. There is hardly a village, hamlet or farming community in the province that has not profited either directly or indirectly by the establishment of the N. S. A. C. Not a few of the graduates of the N. S. A. C are holding important positions in every province of Canada and the United States, but the majority of the graduates have returned to their farms where they are putting in practice the modern practical ideas instilled into their minds by Prof. Cummings and his efficient staff. These young men are not only doing good work for themselves. Their neighbors who have not attended the College are gradually and unconsciously learning to follow their ways. The short course students of the N. S. A. C. constitute a noble army of men and boys who are better farmers today because they have attended the College for even such a short period as two weeks.

The farm homes of Nova Scotia have been materially benefitted because so many of the women and girls have taken a course in home making at the N. S. A. C.

The short Courses at the New Brunswick Agricultural Schools at Woodstock, Sussex and at the proposed School at Newcastle, or some other point on the North Shore, will accomplish a lot of good. The Maritime Farmer, however, believes that more progress could be made and with a great deal less expense by the formation of a Maritime Agricultural College. If, however New Brunswick must have an Agricultural College, what in the name of common sense is the use of dividing energies by erecting three or more expensive, inefficient Agricultural Schools instead of concentrating energies and building one efficient college, preferably affiliated with the University of New Brunswick at Fredericton.

Even with the amount of expense already incurred in the erection of the Woodstock and Sussex Schools we believe the province would make no mistake if it were to join with Nova Scotia in the maintenance of a Maritime College of Agriculture. Short Courses could be held at Sussex, Woodstock, Newcastle and perhaps in other central sections of the province such as is being held in Nova Scotia at Sydney, Antigonish, Musquodobit, Bridgewater and Yarmouth.

We believe Truro the proper centre for a Maritime Agricultural College because the N. S. A. C. has now nearly all the equipment necessary for conducting a four year course.

Hon. J. A. Murray and his coleagues however, have rosy visions of what the future holds in store for New Brunswick and its Agricultural Schools. We wish them success in everything they do for the advancement of agriculture in their province. Yet we maintain, more rapid strides along this line could be made by the united efforts of New Brunswick, Nova Scotia and Prince Edward Island in the maintenance ofone Maritime Agricultural College.

BEHIND THE TIMES.

A few days ago the St. John newspapers made mention of a resolution passed by the teachers of St. John condemning the Nature Study Course in the city schools. The meeting is purported to have been called by Dr. H. S. Bridges. A letter was read telling of similar action on the part of the school teachers of the Counties of York and Sunbury.

Commenting on there resolutions a recent issue of the Kings County Record said:-

"The Record believes that it does not do Dr. Bridges an injustice when it says of him, that he is a strong opponent of Nature Study in the public schools of New Brunswick and a firm believer in the scholastic side of the public school curriculum. In a word, Dr. Bridges is convinced that the efforts of public school teachers should be directed to the furtherance of the interests of the boy and girl with college ambitions, represented by less than one per cent of children entering the primary grades of the province, and that scant attention should be paid to the other 99 per cent of boys and girls, to whom New Brunswick must look for her future.

The Nature Course was adopted in New Brunswick schools after years of agitation and it was the sanest move the Department of education ever made. There is far to much ignorance of very ordinary matters in connection with nature study displayed by the average student of the public schools. In every wide-awake province of Canada, the teaching of nature study has been encouraged and to lend undue importance to the resolutions passed by the teachers of St. John, Sunbury and York, will be to turn pack the hands of the clock. Dr. Bridges has never ceased to offer opposition to nature courses as taught in the public schools of the province which simply goes to show that the gentleman is unprogressive. The welfare of over ninety-nine per cent of public school attendants may well be considered before the wants of less than one per cent of their fellows. The Record has unswervingly supported the introduction of nature study and agricultural teaching in the public schools of the province and believes that the board of education and the goverment of the province, will work inestimable injury on this province, if the suggestion of Dr. Bridges is entertained for a moment It would seem that there is need of further education among some of the teachers of the province".

On more than one occasion we have referred to an address in favor of nature study delivered before the New Brunswick Farmer's and Dairymen's association by Rev. Hunter Boyd, in the course of which he remarked "How much better it would be for our boys and girls to study about things like this—unfolding a colored chart of various breeds of farm poultry, sheep, cattle and horses—than to study about animals and birds they never see unless they visit a zoo or menagerie" The truth of Mr Boyd's assertion appealed to us then and we still believe in it.

Not infrequently we hear, not only boys and girls put also grown up men and women express the utmost ignorance of the most commonplace things of nature. At a recent exhibition a well dressed man, and to look at him you would say he was an intelligent being, asked a prominent Holstein Breeder what breed of cattle such and such an animal belonged to. The animal

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The Yarmouth County Exhibition.

(Continued from Page 41)

Schools

Crowded out of their old place alongside of the fancy work and fine arts departments, the Public Schools and the Rural Science Schools made a fine showing in the new apartment specially fitted up for them by the management. There could be seen vegetables, grains and seeds in no way inferior to those grown by the adults. Collections of woods, bugs and butterflies, some of the latter showing the life history of insects, injurious to plants which promise much for the future of our farming industry, and drawings, designs, and modelling work which augurs help in the future for the fine arts and fancy work departments.

Coming now to individual exhibits of class and prize winners and beginning with horses, Yarmouth horses are still improving. Following the advice of the judges of years past, careful breeding has entirely weeded out the scabs and Yarmouth can now boast of a horse show second to none. Dr. Chas. Webster leads in the Hackney and Clydesdale class. Some fine roadsters were shown by Maynard Hoover, H. B. Cook and Geo. Bain, while Bain and Chas. Butler won prizes in the carriage class. In the general purpose class Harry Boyd and Clifford Cann had some good animals. The showing of draught and heavy draught horses was large, prize winners being Messrs. Crosby, Fred Churchill, R. S. Corning, Geo. W. Murphy and Fred Ross. Some very fine mares for breeding purposes and colts were shown by some of the above well known horse owners as well as Adolphus Corning, W. A. Churcill, R. A. Goudey, Geo. Killam and others. Splendid, fine stepping, spirited, well matched pairs were shown by H. W. Cook, Osbourne Churchill, Edric Cann and Geo. Bain.

As usual in the Shorthorn class the fine, widely known herd of Dr. I. M. Lovitt lead. His Lawndale herd is, however, smaller than in previous years, owing to large sales of this famous beef breed during the year. Osbourne Churchill's herd of Ayrshires up to standard with a few other breeders such as Jos. A. Ellis and Adolph Corning coming along.

The Jerseys represent a very large place in the show, even with some of our best away. In all ages, male and female, there was an excellent showing. Amongst leading prize winners are John C. Corning, Dr. I. M. Lovitt, F. G. and W. L. Cook, Fred Rose, Adolphus Corning, Chas Rogers, C. W. Cook and a long list of others, for the Jersey is perhaps the best dairy cow in this, a dairying county.

The supremacy of the Jersey is, however, disputed by the Guernsey. Both breeds having their good points and admirers. Hence in many cases some breeders and dairymen have herds of both. With H. W. Corning in the lead, as a Guernsey breeder, we find prize winners, too, amongst Lloyd and W. L. Cook, Emerson Servant, Hugh Murphy, Hartley Pitman and Murray Crosby.

Messrs. Henry Pitman, Harold Pinckney and J. F. Palmer represent the Devon herds with very fine animals, whilst the Churchills, Stephen and George, and Adolph Corning, Albert Fuller and the Misses McConnell favor the Holsteins.

The leading prize winners amongst the Herefords are the Burrills, Geo. H., Samuel and Webster.

Mr. Wm. O. Porter had a small, but complete herd of Polled Angus. This breed is a comparatively new one in Yarmouth and the adjoining counties. They are beauties. Any one who saw them could appreciate the remark of the artist who on seeing a picture of this breed, remarked that he did not believe any animal could be so handsome. On seeing them later he remarked that he did not believe any artist could do justice to their beauty. They are a serviceable, hardy, fine breed of cattle.

Quite naturally, leading dairy-cow breeders are also breeders of working oxen, steers and beef cattle. Amongst others winners are, of oxen and steers, Ivan Killam, Wm. A. Killam, Mereton Johnston, Geo. Delaney, Geo. Handy, Wm. H. Cann, and of beef cattle, Chas. Lyons, Chester Churchill, R. A. Gaudry and Aaron Churchill.

Were the dog nuisance properly controlled, our sheep exhibit would be even finer than it is. There is a big improvement due to the fine rams and ewes obtained through government assistance. Notably is this so in Cotswolds, Shropshires and Southdowns. Austin Robbins had some fine Leicesters. Fred Rose and Geo. W. Churchill lead in Cotswolds, whilst Chas. H. Butler and Adolph Corning fully represent the Shropshires. Alvin Robbins has fine exhibits of Oxford Downs and Cheviots. Grades and crosses were shown in large numbers by all the above as well as by Fred Rose, Jos. C. Robbins, B. B. Killam, Stephen Churchill and J. E. Elden.

Exhibits of swine are quite up to standard. Several fine, large litters were for sale for winter pigs, and some splendid boars and sows for breeding. Chester White and Yorkshires predominate. There were some very fine fat pigs and grades. Chief prizes went to W. A. Churchill, H. W. Corning, Emerson Servant, John C. Corning and Edward Cann.

The poultry exhibit too, was good. There were the three breeds of Plymouth Rocks, the barred, the white, and the buffs. In the latter class, E. F. Jordan of Kentville, pulled down all the prizes, as well as taking some "barred" prizes. In the "barred" class other winners were, C. W. Cook, Seymour Crowell and Percy Carly, White Plymouth Rock winners included, Gilbert Allen, Edward Horton, Hartley Pitman and Murray Corning.

In the White Wyandotte class we noted E. F. Jordan, J. W. Bain, and R. M. Churchill; Silver Wyandottes, J. W. Bain and Lawrence Churchill.

Other breeds, such as Light Brahmas, Leghorns, Hamburgs, Brahmas and Houdans, with Bantams, Orpingtons, and Rhode Island Reds kept up their usual continuous clatter, drawing attention to their prize winning owners.

Percy Carey exhibited a pair of capons and fat chickens; T. V. Butler, turkeys; Ralph Porter, Pekin ducks; Toulouse geese, Geo. W. Churchill and Lenley Porter; Emden geese, Gertrude Lewis and Fred Porter. And to wind up this part of the show we may mention Guinea pigs, John Blackadar; rabbits, Spencer Burrill; Belgian hares,, E. Matthews; Flemish giants, Rosie Herman; skunks, Rosie Herman.

Butter, though not so large as usual the exhibit of Dairy Produce, was very attractive, and all exhibits ranged high in the scale of points. Mrs. John C. Corning won prizes for crock butter, 5 lbs. roll or print, and for butter of fancy designs and packages. Patriotic mottoes, flags, etc., being very true to the real thing. Other prizes went to Mrs. H. H. McConnell and J. H. Cann.

Too much praise cannot be given to the exhibit of grain and seed. This exhibit, encouraged for some years past by a liberal award from the Dominion government, has been increasing in quantity, quality and variety of seeds shown. There were whole tables with good exhibits of all seeds commonly planted in the county and some of the rarer varieties. The county has long been famous for its turnip, cabbage, beet, bean, pea and corn seed, as well as for the oats, and barley seed. The competition was very keen. Amongst prize winners are, Fred Rose, G. W. Churchill, John Corning, Harold McConnell, Edric Cann, Chas. Pitman, J. M. Porter, Hartley Pitman, Adolph Corning, Wm. Pinckney, Albert Cann and many others.

The show of vegetables was pronounced the best ever. There was a very big exhibit of squash, one mammoth weighing 75 lbs., grown by D. A. Parker, and there were some splendid pumpkins, when one considers that there were two collective exhibits of vegetables, one containing 86 varieties by Wm. Pinckney, and one of 76 varieties by Gilbert Allen, it will be seen how wide a range of vegetables can be successfully brought to perfection in the county. The names of prize winners would take up the wohle paper. Some of the old favorite varieties of potatoes are giving place to newer ones. But the standard beets, turnips and cabbage do not change much. But in addition to the old standard kinds of vegetables for table use many new kinds are being raised in larger quantities. There were corn stalks, 10 feet high, and with good fully developed, well filled ears too. To be really appreciated the vegetable show must be seen. It cannot be described.

Although the exhibit of fruit was not as large as usual, what there was of it was even better, in quality, color, shape and size than has been seen at much larger exhibits of fruits. There were fifteen well filled tables of standard varieties including the

(Continued on Page 62)

Scores and Awards in the Kings Co. N.B. Crop Growing Competition.

NAME AND ADDRESS	Wheat		Oats		Barley		Buckwheat		Turnips		Total
	Score	Prize	Score	Prize	Score	Prize	Score	Prize	Score	Prize	
Leslie Walker, Lower Millstream	93.75	$7.86	92.5	$7.51	.....	.....	89.5	$7.39	76.00	$7.26	[illegible]
Arthur Marr, Newtown	92.	7.71	.....	.....	.....	.....	87.75	.....	.....	.....	7.71
H. B. Parlee, Sussex	89.75	7.51	.....	7.42	92.5	8.15	.....	.....	.....	.....	[illegible]
W. F. Mosher, Sussex	89.5	7.50	91.5	7.43	.....	.....	92	7.61	80.25	7.67	30.21
S. J. Goodliffe, Sussex	89.25	7.48	85.75	.....	87.5	7.73	.....	.....	.....	.....	[illegible]
Bowser Bros., Rockville	89.	7.46	91	7.40	.....	.....	.....	.....	.....	.....	[illegible]
Jas. S. McFarlane, Sussex Corner	88.5	7.43	.....	.....	.....	.....	.....	.....	.....	.....	7.43
Hamilton Yeomans, Sussex Corner	88.25	7.41	84.75	.....	.....	.....	.....	.....	.....	.....	7.41
Jas. McElroy, Sussex Corner	87.5	7.33	90.25	.....	.....	.....	.....	.....	.....	.....	[illegible]
McIntyre Bros., Sussex Corner	87.25	7.31	89.25	.....	.....	.....	89.75	7.42	73.5	.....	[illegible]
J. Sterling King, Belleisle Creek	87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Robert McAuley, Sussex	86.5	.....	.....	.....	.....	.....	.....	.....	68.5	.....	.....
W. H. Venning, Sussex	86	.....	87.25	.....	85.75	7.57	83	.....	.....	.....	..7.57
Thos. Bell, Rockville	84.5	.....	82.25	.....	.....	.....	.....	.....	.....	.....	.....
T. Albert Davis, Sussex	83.5	.....	91.75	7.45	.....	.....	86	.....	.....	.....	7.45
J. W. Patterson, Rockville	79.25	.....	85	.....	.....	.....	77.5	.....	.....	.....	.....
H. S. Secord, Penobsquis	.....	.....	94	7.63	.....	.....	81.75	.....	.....	.....	7.63
J. H. Manchester, Apohaqui	.....	.....	93.75	7.61	.....	.....	.....	.....	74.5	.....	7.61
M. K. Raymond, Bloomfield	.....	.....	93.5	7.59	.....	.....	93	.....	.....	.....	7.59
Roy Raymond, Bloomfield	.....	.....	92.25	7.49	.....	.....	87.5	7.69	80.5	7.69	22.87
J. T. Prescott, Sussex	.....	.....	92.	7.47	83.5	7.35	.....	.....	.....	.....	14.82
J. E. Hoyt, Hampton	.....	.....	90.75	.....	88	7.77	.....	.....	.....	.....	7.77
J. E. Floyd, Bloomfield	.....	.....	90.5	.....	.....	.....	87	.....	75.75	7.24	7.24
Chas. Carruthers, Sussex	.....	.....	90.25	.....	.....	.....	89.25	7.38	78.75	7.53	14.91
Ainsley Aiton, Sussex	.....	.....	90.	.....	.....	.....	.....	.....	.....	.....	.....
E. O. McIntyre, Sussex	.....	.....	89.75	.....	.....	.....	.....	.....	.....	.....	.....
W. E. McLaughlin, Lower Millstream	.....	.....	89.75	.....	.....	.....	92.75	7.67	.....	.....	7.67
Robert Robinson, Roachville	.....	.....	89.5	.....	.....	.....	.....	.....	.....	.....	.....
Wm. Erb, Sussex	.....	.....	89	.....	.....	.....	.....	.....	.....	.....	.....
Beckwith McKnight, Apohaqui	.....	.....	88.75	.....	.....	.....	.....	.....	.....	.....	.....
Joseph T. Barnes, Sussex	.....	.....	88.25	.....	.....	.....	.....	.....	.....	.....	.....
J. Frank Roach, Sussex	.....	.....	88	.....	.....	.....	.....	.....	.....	.....	.....
J. H. Baird, Lower Millstream	.....	.....	87.75	.....	.....	.....	.....	.....	.....	.....	.....
G. P. Stradwick, Lower Millstream	.....	.....	87	.....	.....	.....	.....	.....	61.5	.....	.....
H. R. McMonagle, Sussex Corner	.....	.....	86.75	.....	.....	.....	.....	.....	.....	.....	.....
Michael Sullivan, Sussex	.....	.....	86.5	.....	.....	.....	89	7.36	.....	.....	7.36
Thos. Reardon, Sussex	.....	.....	86.25	.....	.....	.....	.....	.....	78.25	7.48	7.48
Wm. Holman, Sussex Corner	.....	.....	86	.....	.....	.....	.....	.....	.....	.....	.....
R. S. Shannon, Sussex	.....	.....	85.25	.....	.....	.....	75	.....	.....	.....	.....
Col. H. M. Campbell, Apohaqui	.....	.....	83.75	.....	80	7.07	.....	.....	.....	.....	7.07
W. E. Titus, Bloomfield	.....	.....	83.5	.....	.....	.....	91.5	7.56	.....	.....	7.56
J. Titus Barnes, Apohaqui	.....	.....	81.25	.....	.....	.....	92.5	7.65	.....	.....	7.65
E. R. DeMille, Bloomfield	.....	.....	77.25	.....	78.5	6.94	84	.....	.....	.....	[illegible]
W. R. Burnett, Bloomfield	.....	.....	.....	.....	84	7.42	.....	.....	.....	.....	7.42
A. D. Freeze, Penobsquis	.....	.....	.....	.....	.....	.....	88	7.27	.....	.....	7.27
F. W. Titus, Bloomfield	.....	.....	.....	.....	.....	.....	.....	.....	80.5	7.69	7.69
Thos. Friars, Wards Creek	.....	.....	.....	.....	.....	.....	.....	.....	79.25	7.58	7.58
Wm. Buchanan, Ssusex	.....	.....	.....	.....	.....	.....	.....	.....	78.25	7.48	7.48
Geo. L. Slipp, Sussex	.....	.....	.....	.....	.....	.....	.....	.....	77.25	7.38	7.38
		$75.00		$75.00		$6000		$75.00		$75.00	$360.00

HORTICULTURE.

Marketing Apples.

Never does a year pass without a complaint appearing in the daily press about fruit which must hang until it rots on the trees, because it does not pay to gather and market it. Recently a correspondent of the "Times" made such a statement about apples in the Severn Valley, and added that he had sent six hundredweight of the best Keswick apples he had ever grown to Gloucester fruit auction, and received 9s. for the lot, with 7s. to come off for carriage and labor The writer can say from experience that such a state of affairs can be due only to ignorance of market and marketing methods. Even last year, when apples were superabundant almost everywhere,, he managed to dispose of all, and this year, when the fruit is much less plentiful, there is no difficulty in selling it at prices above the average. There may be a glut in some few districts, but this is certainly not the case in the country as a whole. There is much small "rubbish," due to the dry spring and a bad attack of blight (aphis), but even this is selling at prices that are better than those offered for the best apples last year. It is safe to say that even in seasons of the greatest plenty the grower who knows his business finds it profitable to gather and market his fruit. It is simply a matter of choosing a good market and packing properly. If there is a glut locally, send to a more distant market.

Unfortunately, many English growers are still content to throw their apples into baskets ungraded, or topped up with big specimens, and without troubling to put a standard weight into each basket. So long as such careless methods are adopted the best returns cannot be expected. The man who grades well, packs fairly, and gives full weight, soon obtains a good reputation which stands him in good stead in seasons of plenty, for his fruit is inquired for by buyers in the market.

There is nothing elaborate nor difficult about the packing of apples. The salesmen supply bushel baskets (sieves) for cookers and half-bushels (half-sieves) for dessert varieties. These should be packed to hold 40 lb. and 20 lb. net weight of apples respectively. Line the sides of the basket with newspaper, cut to the right depth, put a little hay in the bottom, and lap over the side sheets of colored tissue paper sold for the purpose. Use pink to denote "firsts," blue for "seconds,' 'and white for "thirds." Leave enough lap to fold over the top of the fruit when the basket is full. The fruit (carefully picked to avoid bruising) is graded into the baskets so prepared. Thirds are not always wanted; it depends upon the sample. The firsts must be all large, clean, sound specimens, and they should be put in one by one, starting round the sides of the basket and filling it up in layers. When full, adjust the weight, allowing for the weight of the empty basket. Seconds are generally packed in the same way, but the thirds need merely to be poured into the baskets. Fruit with open bruises or rotten patches should be thrown out and used for pig feeding. Many of the thirds this year are not much larger than marbles, but they are selling well. Grading is everything, absurd as it may seem in theory. When the baskets are full the colored paper is folded over the fruit and tucked in round the sides. Then a little hay is put on top and kept in place by two benders placed crosswise, their ends, being fixed under the rim of the basket. Instead of benders newspaper may be tied over the hay. Never mix varieties and pack fairly. Thus packed, apples travel well by goods train.—E. Mayhem, in English Exchange.

Apple Orchard Profits.

Net profits of $120 per acre have been made for ten years from a 10-acre Baldwin apple orchard in western New York used in experimental work. The orchard contained 27 trees to the acre and was 27 years old at the beginning of the experiment, which was conducted primarily as a comparative test of sod mulch and tillage.

U. P. Hedrick of the experiment station has made a detailed financial statement which shows the cost and returns that may reasonably be expected from a good orchard in its fourth decade that is well managed. It cost $1.29 per barrel to produce the fruit for apples delivered to the shipping point, and te returns were $2.60 or 100 per cent profit.

An interesting fact in connection with this work is that the yield varied from 2.16 to 5.60 barrels per tree, and there was a crop every year which amounted to an average of 116.8 barrels per acre, of which 79 barrels were of No. 1 and No. 2 stock, and 37½ barrels of culls and drops. The large amount of evaporator stock was due to heavy winds during two years, which took off more than half the crop.

An interest charge of $25 per acre at a valuation of $500 is made for the investment. This is a bookkeeping charge which comes back as a dividend. A charge for superintendance of $300 per year, or $30 per acre is made against the orchard, which is another bookkeeping charge that would come back to the owner as wages.

The annual yield in barrels per acre during the ten years was as follows: 1904, 125; 1905, 59; 1906, 112; 1907, 89; 1908, 152; 1909, 109; 1910, 71; 1911, 152; 1912, 151; 1913, 148.

The average annual expense was figured as follows:

Annual Expense for Ten Years

	Per acre	Per bbl.
Interest	$25.00	.21
Taxes	1.50	.012
Tillage	7.39	.063
Pruning	3.56	.03
Spraying	11.28	.096
Cover crop	2.74	.023
Superintendence	30.00	.25
Harvesting		.244
Barrels		.36
Cost per barrel f o b..		$1.29

Pruning and Spraying Plums.

Keep saw and trimming shears out of your plum trees. Just cut off a dead limb and if some limb so badly interferes with another one that it must be cut off, then do it. I have injured more trees by trimming them in the earlier days of my plum raising than from any other cause.

Spray the trees just before the buds open with lime-sulphur 1 to 10, then after the fruit has set with lime-sulphur, 1 to 40, adding three pounds arsenate of lead to the barrel which will be beneficial to destroy the brown rot. This spraying may be repeated every ten days, but must not be used within four or five weeks of ripening of the fruit.

Cut down or dig up old trees when they have lost their vigor and set out new ones. Dig a hole as big as a bushel basket at least in which to set the tree. Put some good rich loam in the hole, and a half-peck of wood ashes turned in after the small roots are covered will be found beneficial.—J. H. Tenney, Massachusetts.

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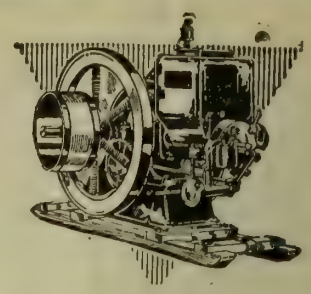

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Pinched Feet Bad for Trees.

Dynamite isn't a commodity that a woman ordinarily enthuses over, but Mary Jane Gregory of Colorado, has found something in it to commend itself to her. She had a number of four-year-old locust trees on her place and was anxious to have them grow uniformly, but last spring one of them showed no signs of life.

A neighbor was appealed to for advice. His opinion was that the tree was root-bound by the compact prairie soil in which it was growing. This man happened to be familiar with the use of dynamite and suggested as a remedy for the trouble that a bore hole be put down in the ground about three feet from the trunk of the tree and loaded with a small charge of the explosive.

Mrs. Gregory in speaking of the resutl of the experiment says: "This shot loosened the soil about the tree and a week or two later, it began to leaf out an da few weeks later was ahead of the other trees."—F. W. Wilson.

Grow Rhubarb in Cellar.

Plans should be made to have a supply of winter rhubarb. Rhubarb pie and sauce is always relished by everybody on cold winter days. There is no reason why everyone could not have a winter garden of this plant in their cellar, but do not wait too long before preparing this garden. In order to have nice tender rhubarb it is necessary that the plant grows quickly, all that is required is a warm cellar. This plant will grow with just moisture and heat for the roots, but if planted in a rich soil 4 or 5 inches deep it will grow more rapidly. A half dozen good roots planted will supply enough rhubarb for an ordinary family a month. After these are used, new roots must be started.

Dig some of the roots and leave them in a cool, dry place where they can be taken in when wanted. Then plant them as described and water and warm them. If you are too busy to dig the ground early the roots may have frozen dirt come up with them, but there is no harm in that, and you can plant the roots with the dirt on them. If you leave the digging until November, it may be too late, as the ground may be so frozen it will be impossible to dig the plants.

Joe Wins a Robin.

J. P. Landry, Poultry Superintendent at the N. S. A. C., was recently married to a Miss Robins, of Truro. The Maritime Farmer congratulates "Joe" on taking this important step and extends to him and his life partner its best wishes for a long, happy and prosperous career.

Flowers For Easter.

In October plant or pot your Holland bulbs for outdoor blooming in early spring. During the dark, cold days of November and the first winter months the bulbs will be embedded in the outside soil or in potts or boxes in the cellar, and seem to be hidden there, doing nothing. But all the while they are putting forth their sprouts and stems, getting ready to bloom, and when the warm April or Easter days arrive, and the outside bulbs have previously had some of the sunbaths of the earlier months and those in the cellar have been treated in the same way, suddenly your garden or the living rooms of your home will be made gorgeous with beautiful flowers in the brilliant colors and tones of the hyacinth, tulip, crocus, narcissus, and snowdrop. The very picture in the fancy of this enchanting herald host of spring should be enough to incite the home-gardener and the rural dweller and their wives and daughters to begin the planting of their bulbs at once.

For outdoor planting select a soil with good drainage, if possible; wet ground causes bulbs to rot. For a bed, remove the top soil to a depth of six inches and spade up the subsoil, adding well-rottted (never fresh) manure, or bone-meal, or both. Cover the sub-

soil, after the manure has been added with sand; then plant the pulbs, and cover with the top soil. Tulips should be planted 4 or 5 inches deep and apart; narcissus somewhat deeper and from 6 to 12 inches apart. As soon as the ground freezes, the bed should be lightly covered with straw, leaves, or brush; this prevents injury from freezing in winter and from thaws in spring. One of the best places to plant bulbs is in the borders amongst the perennials or in front of the shrubbery.

For indoor blooming, bulbs should be planted in clean pots or boxes containing rich loam or potting soil, fertilized with well-rotted manure. In the pots at the bottom, put a few pieces of broken pot, cinders, or charcoal. Cover this with a little moss (bog or sphagnum), or with fibre from sifted soil. Next(fill the pots with soil to within three-quarters of an inch from the uper rim; then plant the bulbs so that their tops are covered with thhe soil. Water and place in a cool, dark section of the cellar, and protect from vermin. When the stems begin to lengthen, bring the potted or boxed bulbs up into the early winter sunlight and warmth. In about six or seven weeks they will have bloomed, and by Easter your garden or home will be radiant with a glory of variegated color that will enchant the eye and cheer the heart. Plant your bulbs now.

W. R. Reek Will Fill Place.

(By Special Correspondence to The Maritime Farmer.)

Interim instructors are being engaged by the College of Agriculture to carry on the work of those members of the faculty and assistants who have enlisted. Mr. W. R. Reek, B.S.A., Director of Agricultural Education for Prince Edward Island, will conduct the classes in Surveying and Land Drainage, during the absence of Professor B. H. Landells, who is now a sergeant with the Princess Patricias. Mr. Reek will take charge of the senior class in these subjects, beginning October 19, and will also, as his directoral duties in P.E.I. permit, continue instruction from time to time throughout the new term. Before assuming his duties in the Garden Province, he was Assistant Professor at the Ontario Agricultural College, the same position that Principal Cumming held before he assumed his present function. The College management is also planning to fill with interim instructors the places of three other teachers who are completing arrangements to enlist for overseas service.

The regular classes will open November 2. On account of the large percentage of enlisted students, the senoir class will be smaller than in past years. But the number of applications from junior students is in excess of those received in October of last year. The addition of the new, large and well-equipped Science Hall will give the students unprecedented facilities for individual research work.

Winter Storage for Vegetables.

There are three important consideration in connection with the placing of vegetables in storage: 1, The vegetables themselves should be of good quality, free from disease or bruises; 2, they must not be put in too early or be piled so that any heating will take place; 3, they must not be subjected to an atmosphere which is so dry that it will cause wilting and thereby spoil their quality. It is possible for the home gardener to keep root crops, potatoes, cabbage and squash for some months in most house cellars with the exercise of some precautions, even where a cool cellar is not provided. Vegetables should be stored as far away from the heater as possible, excepting in cellars where freezing occurs. If there is a cement floor it is best to pack the root crops in boxes or barrels and cover the top with clean sand or sifted soil in which there is not much organic matter. A covering of about 2 inches is sufficient.

In case either the commercial grower or the home gardener lacks a storage place, there is the alternative which is available to almost everyone who has a garden. This is the vegetable pit. The essentials are: 1, A well-drained piece of land conveniently located; 2, some material to cover the pit after the cold weather comes The crops which can be successfully handled in this way are beets, carrots, parsnips, turnips, winter radish and cabbages. The outdoor vegetable pit is made in the following manner. On the spot selected, measure off a space 3 or 4 feet wide and as long as desired. Plan to have the pit extend north and south. The soil should be removed 8 to 12 inches deep the width of the pit and one-half of te eart thrown out on either side. The bottom of the pit should be made level and the sides cut straight down. The root crops are then piled on the ground the full width of the excavation and brought to a ridge about 2½ feet deep at the center. Rarely will the home gardener need a pit more than 6 to 8 feet long and it is wisdom for him to mix roots stored so that all sorts can be obtained at one end.

The commercial grower will do well to use one pit for each kind of vegetables stored. The roots should not be piled before the weather is cool. They should be dry and covered with about 2 inches of soil to prevent frost injury or wilting. As the weather grows colder, and preferably after the first soil covering has frozen nearly to the vegetables, more should be applied to a thickness of 2 to 4 inches. It is well to obtain this soil alongside of the pit in such a way that good drainage will be assured. After more cold weather additional covering of straw, meadow hay leavess or similar good protective material is added.

E. E. Emerson Recovers

"It is hard to keep a good man down, as was impressed upon the people in town when they welcomed Edwell Emerson in their midst again on Saturday.. Mr. Emerson was severely gored by a bull on the St. Stephen fair grounds a few weeks ago, but has now almost fully recovered, the only effect felt being occasional pain in the back, and this is wearing away.—St. Croix Courier.

Mr. Emerson is a prominent Ayrshire breeder in Charlotte county. The Maritime Farmer joins with its readers in congratulating Mr. Emerson on his recovery.

The Cheese Industry in Prince Edward Island.

The year 1900 was the banner cheese year in Prince Edward Island. Since then the business has not been so good at the factories in any year by at least 10,000,000 lbs. of milk. In that year the milk delivered to the factories realized 60.75c per cwt. which no doubt discouraged the patrons. Last year, with a total milk delivery at the factories of 38,515,389 lbs., realized $1.01.6 per cwt., which was some difference from 1900. Island cheese is the best cheese in Canada. The average price received by the patrons for the past three years has been $1.02 per cwt. This is higher than Ontario by a couple of cents. The cool, moist climate of the Island, and the nourishing, salien grasses explains the superiority of Island cheese. The farmers of this "garden province" as it is called, stand, however, in their own light in bothering with cheese at all. Ever since 1900 it would have been more profitable for the farmers to have turned their milk into butter, for nearly every year since then milk made into butter returned a slightly higher price than that made into cheese, not counting the inestimable value of the skim milk at all. If we add the value of the skim milk, which at present prices of feeds would be about 33c per cwt., butter making comes out away ahead, while everybody knows it is less impoverishing on the land. Cheese making does not improve the soil, though it is far ahead of grain-growing; butter-making on the other hand, does not impoverish the soil. In the last three years of high prices for cheese, making the milk into cheese figured a few cents higher, not counting the skim milk. Last year, 1913, milk for cheese-making realized at the factories, $1.01.6, while that for butter-making realized $0.98 per cwt, but adding 33c for the value of the skim milk we see the advantage of butter making, to say nothing of the benefit to the soil of the little province.

Cheese will rule this year around $1 a cwt. for the milk, but farmers are beginning to see that the price is too low. Selling milk at that price this season with hay selling around $20 a ton, and meal around $1.50 and upwards, is certainly too low. The by-product of a cheese factory is valuable, if obtained fresh, but the whey is seldom obtained in any form, not being generally taken back by the patron. A few people near the factory usually get what they need, and the rest is let go in the drain. With the separator and the creamery, in this cool climate, the cream could be delivered in prime condition and the skimmilk retained at home to be fed the bacon hog of which this Island province produces such numbers, and such fancy prices for the British market, the full value of 33c would easily be obtainable when fed to the Island Yorkshire and Tamworth bacon pigs. I got some meal the other day, largely shorts, and it cost us $1.55 per cwt. f.o.b., at shipping point. This is as low as meal may be purchased, so that 33c per cwt. for skim milk is not placing too high a value on it.

I think that cheese-dairying is the lowest form of dairy farming, and fail to observe that the farmers in cheese districts get along as thriftily as they do in butter districts. The reasons are manifest, and need not be explained.

Why do the patrons prefer patronizing a cheese factory in preference to a creamery? Because it is easier to do so. Because tainted milk, dirty milk, and frequently sour milk, will be accepted at the cheese factory, where it would not at the creamery; because the poorest kind of milk, testing often less than 3 per cent is accepted, and because this poor, watery milk fetches as much per cwt. as the 5 per cent Jersey milk. None of the factories take milk by test. It is all taken by weight at Canadian factories, both in Prince Edward Island and Ontario. Patrons are all getting into the Holstein breed of cattle, so that they can furnish a large quantity of poor milk, an dare after doing away entirely with the Jerseys and the Guernseys which give rich milk. Apply the test at the factories and this will change back again. A good cheese maker—I mean skilled—can manipulate pretty poor milk into a fair cheese. Milk that would be disqualified at the city milk depot or at a creamery is, by the skill of our good (good is not the proper word, for a cheese-maker who accepts bad milk is not a "good" man) cheesemakers manufactured into passable cheese. This then is why the people patronize the cheese factory in preference to the creamery, though they know there is more money in butter. Slipshod methods and indifferent goods answers for the cheese factory; it does not answer for the creamery, hence one need not expect to find producers of clean, rich milk in dairy districts, nor the best farmers, either. I consider cheese-making except, perhaps, for a couple of months in mid-summer, a pretty poor system of farming.—J. A. Macdonald.

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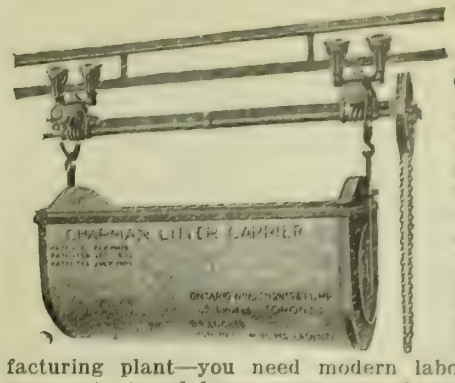

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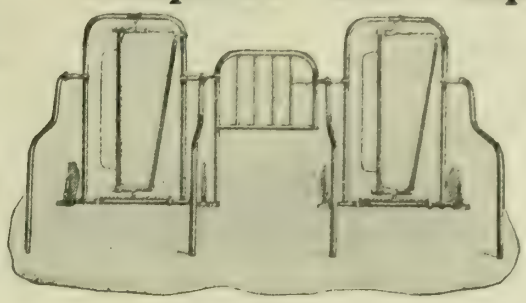

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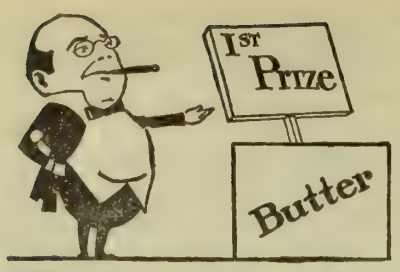

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DAIRYING.

Two-Versus-Three Daily Milkings.

In the care of cows for Advanced Register work, one of the first questions that arises is "How many times a day shall the cows be milked?" The belief that they should be milked three times, or even four for maximum results, deters many from entering their cows.

In this connection it is well to note that the number of Guernsey breeders who are milking two and three times daily, is about evenly divided, and less than two per cent milk four times. Opinions vary as to the increase obtained. That some of the apparent gain is due to the cows handling a larger ration safely is probably true. The feeder unconsciously or intentionally gives the cows more grain when feeding three or four times than he would in two feeds per day. How the added cost of labor, with its bearing upon the routine of farm work, together with the larger grain bills, affects the cost of production, is an open question.

We need more carefully conducted experimental data along this line. The effect of unequal milking periods, with the varying percentages obtained, and if they affect materially the normal averages for the day, is also an open question. That others are studying these questions carefully is evidenced by the following very timely article in the "Farmer and Stock Breeder" of London, England, for August twenty-third.

An interesting pamphlet has been issued by the Armstrong College of Agriculture, giving particulars of experiments in milking and feeding dairy cattle. Those which deal with the times of milking throw little fresh light on the subject. Rather do they confirm general experience. The Offerton Hall tests are fairly conclusive upon several points. They drive home the prevailing opinion that a long and a shorter milking period tend to make the quality of the milk vary, but unless the long period is unduly extended there is not likely to be any variation in the total yield between dairy cattle thus managed and those which are milked at twelve hour intervals. The conclusions arrived at are as follows:—

1. It cannot be said that the total quantity of milk is influenced by the equal or unequal periods of milking.

2. So far as the percentage of fat in milk is concerned, it is distinctly shown that the length of time between morning and evening milking does very materially alter it.

3. The results distinctly emphasize the fact that one very important means of getting over the difficulty of poorer morning's milk is to endeavor to make the period of milking as even as possible.

4. It is frequently asserted that the general public demand their milk at such times as to prevent the more general adoption of equal milking periods. If by these and similar experiments it can be shown to the public that equal milking periods produce more even quality of milk, they may in time be sufficiently sympathetic to help the milk producer to get over what is at present a very serious trouble to him.

5. The results again emphasize the necessity in cases of prosecution for selling milk below the standard to take into consideration the desirability of taking an evening as well as a morning sample of milk for analysis before such prosecution is pursued.

6. It is possible that while the percentage of fat remains practically normal under conditions of severe drought the "solids not fat" may be lowered somewhat.

7. In both experiments the cows of Lot 1 gave slightly greater percentages of "solids not fat" in the milk. This was probably due to the individuality of the cows comprising this group.

8. The cows which were milked at even periods gave more milk in the evening than in the morning. The evening's milk was also slightly poorer in quality than the morning's. This is contrary to generally accepted experiences, as in ordinary farm practice unequal periods of milking are the rule.

To test the relative merits of milking twice and thrice daily, some experiments were carried out. In the main it has been found that there is no tangible advantage in three milkings in twenty-four hours, unless the demand for warm milk may be considered to justify it. The milk is poorer in the morning as a result of three milkings. The results are thus summarized:

1. It is commonly supposed that the milking of cows three times a day as against twice causes the cows to give a greater quantity of milk per day. As a sequence, if the milk is of normal quality, naturally a greater return of fat and non-fatty solids would be produced.

2. Previous experiments have shown that milking at equal intervals and twice a day does away with the great difficulty of the morning's milk falling below the 3 per cent limit. If such a system could be universally adopted, it would be well. A tremendous amount of prejudice on the part of consumers would have, however, to be overcome. Such a general change, too, on the part of the farmers cannot by any means be easily brought about.

3. So far as milking three times a day is concerned, the results obtained in these experiments show no advantage whatever. On the contrary, the extra driving and other undue interference with the treatment of the cows has produced results of a negative character.

4. Considering the difficulties in connection with labor, at the present time especially the extra trouble and expense of a third milking seems to be in no way justified.

5. It would be well for milk producer to study these facts, and through their associations get experiments of a similar character carried out. If such results confirm these experiments it would surely seem meet to get their associations to combine and move in the direction of getting one and all farmers to adopt the more economical system of milking twice a day as distinct from thrice, and at as nearly even intervals as possible.

6. The writer is well aware of the views of milk producers near towns, who are more heavily rented than farmers further away. They claim that one of the advantages they especially appreciate as enabling them to meet competition from far-away farmers is the demand of the part of the consumers for warm milk. But the question of producing milk of an even quality is of the utmost importance, and certainly seems to be worth more seriously thinking about by all concerned especially as no benefit seems to be got from thrice milking as compared with twice. The milk, too, in the morning from thrice milking is often of a poor character, and falls below the 3 per cent fat limit.

7. It may be well to mention that the practice of milking a heavy milker three times a day for a few days after calving for her relief has been in no way under discussion.

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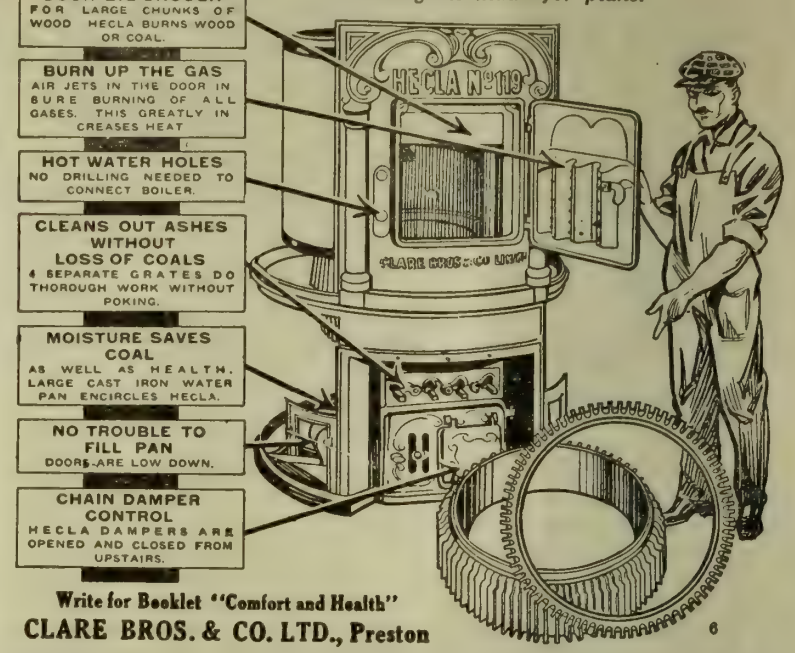
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The Care of Milking Machines.

One of the facts brought out at the recent National Milk Show at San Francisco, where milk was judged after it had been produced seven or eight days and shipped from all parts of the country, was that it is a credit to the milking machines, as several of them produced milk that exhibited as low as a few hundred in bacterial count.

One of the most important needs of users of milking machines is that of quick cleaning. This can be done by running cold water through the machines immediately after they have milked the last cow, until water looks clear, showing that the milk has been taken out of the tubes and cups of the machine. Then at least once a day it should be thoroughly washed with a washing powder that contains no animal fat, as animal fat is detrimental to rubber parts and tubes, such as all

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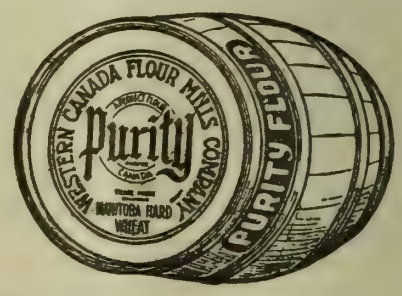

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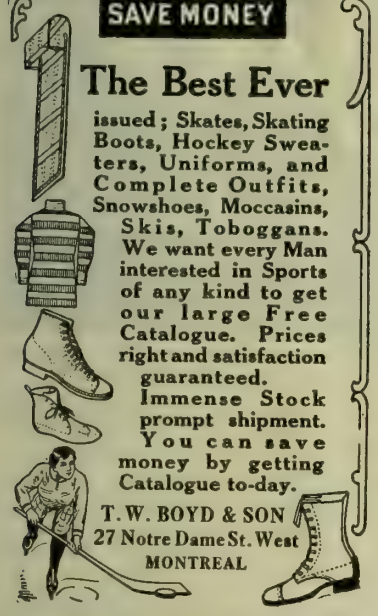

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machines are now using.

The washing of a milking machine is similar to washing a cream separator. It should be done properly at the proper time. The same rule applies to all milking utensils. They should not be allowed to stand until the casein hardens.

The writer has seen a number of cases where through lack of washing the machines failed to produce proper results, either in speed or thorough milking. The man who is in the dairy business must expect to wash his dairy utensils the same as he would feed his hogs if he were in the hog business. Not only is this essential for the successful operation of the machine, but leaving the milk stand on the rubber parts any length of time is very detrimental to the rubber, as the animal fat acts upon it in a way that is damaging to the rubber. I thing that makers of cow milkers will testify that their greatest trouble comes from the lack of thorough cleansing of the tubes and cups. A vast amount of education on dairy sanitation has been given farmers in the past few years, and it is necessary that they take these lessons well to heart, if they invest in milking machines.

The Ripening of Cream.

To ensure the successful ripening of cream, certain essential facts are to be observed. These may be stated as follows:

(1) Obtaining an even condition of acidity by the action of pure lactic ferments, which development may be brought about by an even and suitable temperature, allowing pure, uncontaminated milk in the first place.

(2) It is absolutely necessary to have a dry and well-aired room, as a dark and damp atmosphere will cause a mould on the cream, which is certainly detrimental to flavor of both cream and butter.

(3) A certain amount of clear daylight is also required, but not too strong a light or direct sunlight, which falling on the cream, is apt to cause streakiness and discoloration of the butter.

(4) Pure air and clean surroundings are not to be forgotten, as cream is capable of absorbing all bad smells and noxious taints.

Cream when properly ripe, has a uniform velvety and leathery appearance and consistency, and if tested by the acidimeter, will show the presence of five to six per cent of acid, which is chiefly composed of lactic acid. In the cases where buttermilk is utilized as a souring medium, its quality must be strictly noted from day to day, because if it is not of a good, sharp, clean flavor, it may be the means of introducing and transferring injurious and destructive flavor, and this may continue during churing and after churing.

There are a few dairies where bad ferments have taken a tight hold, and it seems practically out of the question for the maker to produce a good-flavored butted. Where such is the case, it is essential to eliminate the taint, and introduce new life in the shape of a fresh ferment. A thorough spring cleaning of the dairy and everything connected with it should be the first part of the endeavor to eliminate the taint, the walls and floors being washed thoroughly, and all utensils scalded, so as to destroy as far as possible all injurious organisms present. The next thing which needs attention is the lime-washing of the walls; and then a new start can be made by scalding all cream to 150 degrees Fahrenheit, cooling and ripening it with a pure culture. It is as well to say that pure cultures do not by any means produce the finest flavored butter, as, when introduced, they only develop after a while. The explanation of this is that one species of bacteria, producing lactic acid only, does not develop flavor as well as some scores of other species doing this; thus where it is possible to obtain buttermilk from some dairy which is especially noted for the good and characteristic flavor of the butter, the use of this will in all probability answer the purpose better than pure cultures, and produce a good flavored butter immediately.

Turning Them Back

The importations of foreign separators into Canada are declining. The Canadian-Made Standard is turning them back, and at the same time making satisfactory progress itself in an invasion of United States territory. This proves beyond a doubt that Canadian capital, Canadian labor, Canadian brains and Canadian skill, as represented in the

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Effects of Salt and Rock Salt in the Fattening of Cattle and Sheep.

Cattle

At Cockle Park, the Northumberland County Agricultural Experiment Station, in the first trial with fattening cattle eighteen-twenty-four months old, during the winter of 1914-1915, twenty-four cattle just over eighteen months old in November, 1914, were used. They were all bred at Cockle Park, twenty-two of them being blue-greys from a white Shorthorn bull and Galloway cows, while two were from a white Shorthorn bull and Aberdeen-Angus cows. They were divided into eight lots, three beasts being in each lot. Lots A B C and D were bullocks, and were fed in boxes, there being one box for each lot. Lots E F G and H were heifers, and were fed in stalls. The trial began on November 19th and ended on March 11th. The main objects of the trial were to test the feeding of the cattle: (a) Without salt, (b) with free access to lumps of rock salt, (c) with one ounce of salt added to the food daily.

The Daily Feeding Rations

The daily feeding rations fed per 1,000 lbs. live weight were as follows:

FOODS

High swede ration, Lots C D G and H.	
Swedes	84 lb
Meadow hay	14 lb
Soya cake	3½ lb
Bombay cotton cake	2¼ lb
Bran	2 lb
Low swede ration, Lots A B E and F.	
Swedes	28 lb
Meadow hay	21 lb
Soya cake	2 lb
Bombay cotton cake	4 lb
Bran	3½ lb

As the average weight of the bullocks at the beginning of the trial was about 7¾ cwt. live weight, and of the heifers about 6½ cwt., the daily rations fed were considerably lower than the foregoing in the earlier months of the trial. Towards the end the bullocks were receiving more than the foregoing, as their average live weight was greater than 1,000 lb., but the heifers did not reach 1,000 lb. live weight at the end of the trial.

Results

The results show that the bullocks which received no salt gained on the average 17 lb. weekly in live weight, while the bullocks which had access to rock salt in the feeding troughs gained 16⅝ lbs. weekly. The heifers which received no salt gained on the average 12¾ lb. weekly, while those with 1 oz. of salt daily mixed with their concentrated food gained 13 lb. weekly. These results show that the salt had practically no effect either with the bullocks which had access to rock salt, or with the heifers to which I oz. salt was fed daily.

Salt in Swedes

The bullocks receiving the heavy root ration did rather better when they had access to rock salt, but not so when they were receiving the light ration or roots; and the same results were noted with the heifers. Mr. S. H. Collins, College Adviser in Agricultural Chemistry, found that the swedes fed to the cattle, and sampled on January 26th, contained 10.64 per cent of dry matter, including .02 per cent of salt. The cattle therefore consuming 84 lbs. swedes daily would receive about ¼ oz. salt daily in the swedes they ate, whereas those consuming 28 lbs. swedes daily would heceive about 1-12th oz. of salt in the swedes.

High and Low Swede Rations

From the results it was found that the bullocks receiving 84 lb. swedes daily gained on the average 18¼ lb live weight weekly, while those receiving 28 lb. swedes daily made live weight gains of 15⅜ lb. weekly. On the other hand, the heifers receiving the high swede ration gained 11⅞ lb. weekly, whereas those receiving the low swede ration gained 13⅞ lb. weekly. On the average therefore, practically the same feeding results were obtained from the high and the low swede rations, thus confirming former results at Cockle Park that substitutes for a large amount of swedes can be used that will give equivalent results consisting on concentrated foods and fodder, provided they contain the same nutrients.

Sheep

In the second trial, with fattening sheep in sheephouse during the winter of 1914-1915, the sheep used were forty-eight half-breed hoggs which had been bred at Cockle Park in season 1914. Three lots of sixteen in each lot were fed in the sheephouse. Each of the lots were in four pens, four hoggs in each, two of the pens being to the east and two to the west. A preliminary period of a fortnight preceded the trial. The hoggs were valued at 33s 6d. a head on November 7th, and as they realized 5⅝ pence per lb. live weight when sold, their value when the trial ended was just over 57s. a head.

Daily Feeding Ration

The daily ration per 100 lb. live weight (practically per head) was 10.7 lb. turnips, 1.2 lb. meadow hay, 4 lb soya cake, and 4 lb. Bombay cotton cake. Lot 1 received no salt, lot 2 had access to rock salt, and lot 3 had ¼ oz. common salt daily in the concentrated food.

Results

The results show that the sheep in lot 1, receiving no salt, gained on the average 1.87 lb. in live weight weekly; those in lot 2, with access to rock salt, 1.67 lb.; and those in lot 3, with ¼ oz. common salt fed daily with concentrated food, 1.76 lb. Salt, therefore, either in the form of rock salt or as common salt fed with the concentrated food, has not been an advantage, but rather the reverse.

Summary of Results with Salt.

In summarizing the results obtained with the use of salt, Professor Douglas A. Gilchrist says:

These trials were made because it has not been the practice at Cockle Park to use salt for fattening cattle, store cattle, or sheep, either indoors or on pasture. The object of the trials was to ascertain whether the live stock should have access to rock salt or should have the ordinary salt mixed

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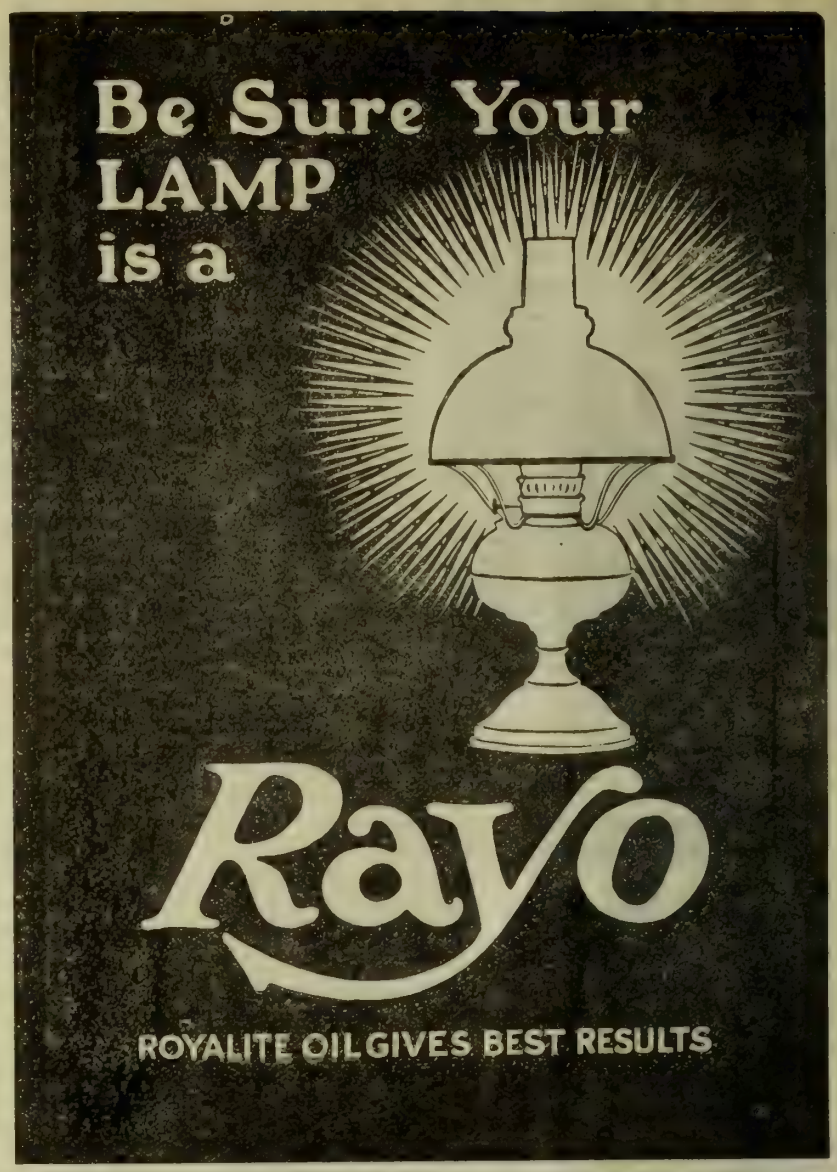

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with their food. The foregoing trials clearly indicate that salt is not required for fattening cattle or sheep fed indoors at Cockle Park. It looks as if the foods fed to the live stock at Cockle Park contain a sufficient amount of salt, and that, therefore, the addition of salt is not required.

In the foregoing trials the prices per ton of the foods were taken as follows: Swedes, 10s; meadow hay, £2 10s; oat straw, £1 15s; soya cake, £8 15s; Bombay cotton cake, £6 2s. 6d.; bran, £6 5s.

Cockle Park is about six miles from the east coast, but the prevailing winds are from the south-west.—Exchange, England.

Mating the Ewes.

Mistakes are often made in buying rams. Selections of ewes are far more judicious. Ram sellers often fatten up their sheep to such a pitch that not only are defects hidden, but the animals are in some cases rendered useless as sires. A second plan to hide faults is to shear early, so that in the autumn, when most ram sales take place, the wool is so grown as to bear trimming in such a way that defects are hidden by paring down strong points to strengthen weak ones. Then comes the painting or staining process, which consists of so coloring the wool that the owner of sheep can scarcely recognize them. In this way the purchaser is deceived and some hidden defects in a ram may be imparted to scores of offspring. Buyers should seek out flocks well bred and healthy, where no making up is practised, instead of spending their money among breeders who go in for over-high feeding.

Ram Lambs

For two years I have tried experiments with Shropshire ram lambs, and the result has been very satisfactory. I have given each ram a score ewes, and singularly enough, both years I had an average of two lambs to a ewe. There were enough triplets to make out the singles. The lambs were very strong and healthy, and sold off fat to the butcher. The young sires after service were wintered and did well on ordinary fare. It is not likely that I should have got so many lambs from older sires. I took the precaution to mate full-mouthed ewes, which I consider much better than using theaves. I often see the advice given that ram lambs for use should be highly fed from birth, and be made fat by autumn. This is folly in the extreme, as not only are the young sires made unfit for early use, but are damaged in constitution for after years. In my experiments the youngsters only got very ordinary food, simply a good pasture, neither did they need more. Thus I am of the opinion that a few ewes put to ram lambs leads to satisfactory results, providing the lambs are tolerably strong.

Feed Ewes Well

This is necessary for a month or so before the ewes are mated, so that when the ram is brought to them they are in thriving condition. I do not approve of giving ewes heating food such as beans and peas. Grass, fresh "seeds," cabbage, or rape are wholesome feeds. Too often when every precaution is taken to nourish ewes before and about mating time neglect is shown afterwards. It would have been better even to have kept the sheep on poor diet all through for when full of lambs loss by way of abortion or other ills is sure to result among neglected flocks. Some extra food is always needed in winter, when pastures become bare, and bran, oats and linseed cake answer well with a few swedes. Broken-mouthed sheep should not be bred from; indeed they should be culled several years before the teeth fall out.

Mating Ewes Over-Early.

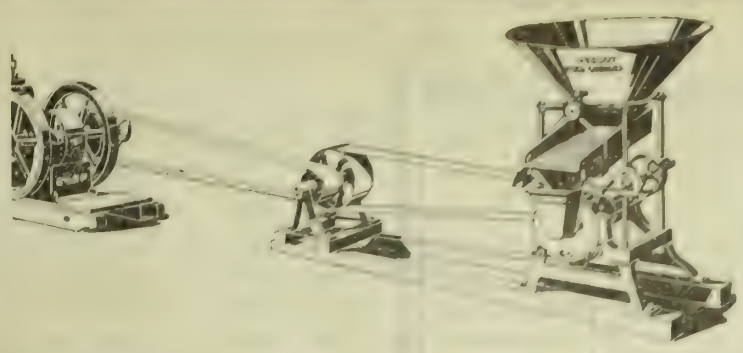
Many old breeders err in this, with the result that lambs fall before grass comes, the ewes get poor while heavy with lamb, and poorer still when suckling, and condition lost at such times is not regained until latter end of summer. Poverty leads to losses in yeaning-time, and that in many ways. When ewes yean towards spring they hold their flesh during pregnancy, give a good supply of milk, and keep in good order even until weaning time.—Warwickshire.

Saving Pastures.

For want of forethought or of knowledge many farmers do themselves double injury by not saving their pastures and not conserving the summer gains made by their livestock.

The rapid growth of grass in summer and the prevalence of fine weather enables fatting cattle, cows, and calves to make such excellent gains that by September they are generally i ngood condition. But cold nights and short days check the growth of grass. Consequently cattle left out in pasture during October and November eat up the grass to the last vestige. A double evil results—the pastures are cleaned so close that they are not in a condition to stand the winter, and the cattle, through lack of choice fresh grass, have become so thin and devitalized that they cannot make good use of winter feed, and thus get a poor start for gains when they are again put out to pasture in the spring.

Don't treat your pastures and cattle in that way. Get the latter housed in the barn at the beginning of the months when the short days and cold nights prevail and give them winter feed. Or, if you let them out to pasture during the day, then as soon as they are in the barn supplement the pasture grass they have nibbled with rape, soft turnips or other green feed. In this way the cattle will not lose the gains they made in summer, will be ready in the spring to go to the new grass able to assimilate it to the best advantage, and thus make further gains. At the same time the pastures will be in a condition which will enable them to produce a prime quality of fattening grass.



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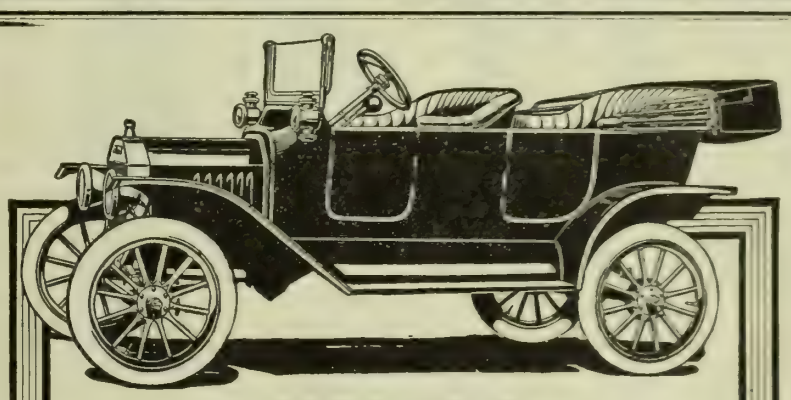

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THE HORSE

Strangles.

Most horsemen will say at once that strangles is contagious, and personally I believe they are right. We know how strangles will run through a stable—indeed, through a district—and there are also cases on record of the transference of the disease from horse to man. As to the cause, it has been referred to cold, to dentition, and to domestication, but not one of these explanations will hold water for a moment. We know for certain that it is peculiar to horses, and that it is preeminently a juvenile disease, although horses of all ages are liable to it. It is uncertain whether horses take strangles more than once in their lives, and the point is difficult to solve, owing to the history of most animals being hard to trace, but the rule seems to be that it rarely attacks the same animal more than once, after which the predisposition to it disappears, while there is no doubt that many escape altogether.

Symptoms.

The symptoms of ordinary or benign strangles are, in the initial stage, general dullness, a slight cough, and a loss of appetite—symptoms that are practically those of a febrile condition, and might herald a cold or any inflammatory attack. The thermometer shows a rise in the internal temperature, which generally increases as the specific abscess is developed, and decreases with its bursting and discharge. There is a hard swelling to be detected on manipulation in the submaxillary space, the throat generally looks swollen externally, and is, from the inability or disinclination to swallow, obviously sore. The swelling between the jaw is hot and tender to touch, and steadily increases until its fluctuations on pressure indicate the presence of pus; the skin becomes thin, and, if not previously opened as soon as the abscess is ripe, it bursts and discharges. There is often a dribbling of saliva from the mouth, and more or less, generally more, discharge of bright yellow, thick matter from the nostrils. The treatment of simple strangles is also simple, but admits of some variation. It is a disease that runs a definite course, and it may be left severely alone. But the suffering may be materially diminished and valuable time saved by judicious treatment.

Good nursing is of the utmost importance—in fact medical treatment is quite secondary to it. Colts frequently develop the disease at grass, and then the patient should be at once removed to a cool, airy loose-box, care being taken, however, to avoid direct drafts. The stabled steed should be at once isolated. Too much stress cannot be laid on the necessity for an abundant supply of pure air, not only in this, but in all respiratory troubles. Not much food will be taken during the first few days, but the appetite should be encouraged with delicacies. Only small quantities of food should be given at once, and any remaining should be removed, if obviously refused. Green-meat in season, carrots, soaked peas, bruised and scalded oats, and hay-tea should be offered. In the case of working horses sufficient time should always be allowed for complete recovery—too much hurry may result in much greater loss of time.—Veteran.

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The Pleasure Horse.

To the owner of the horse kept for pleasure, and especially if he has a paddock attached to his little place, as is very often the case, turning out to grass seems to offer many advantages, but also it has drawbacks, because it is not reasonable to expect either hard work or fast work on a grass belly. The animal turned out is being kept more cheaply than it is possible in the stable, it needs less looking after, and gets exercise in its quest for food, but it is never what can be called "fit." The man who only requires the services of a horse occasionally owns an animal with a greater liability to disease and lameness than he who has regular every-day work to be performed. The horse gets the amount of grain necessary to working condition, it gets saucy, and is apt to "wax fat and kick," because its work is not regular. The old man, who has to cultivate the acre of garden, milk the cow, feed the pigs, clean the knives and boots, and carry up coals has no time and very little inclination to take the cob out for exercise. The owner, especially if the weather is bad, does not want to go out simply because ought in the interests of health and condition to do so, but when he feels like taking a drive, or the occasion arises, he expects to be able to go as fast as anybody else, and his horse to be in a condition to do it. There is really no way of keeping this class of horse in a condition fit for work, for whether kept in or turned out the animal is bound to be "unfit," although it may look sleek and fat.

The common practice is to catch the animal up from the field, full of grass, and blowing like a grampus, from having galloped all over it in evading capture, put him in the stable, and give him a heavy feed of grain while the thick of the dirt is taken off or out of him with a dandy brush. Out of this feed of grain the animal is supposed to extract strength and endurance to enable him to perform the work required, but he is more likely to get broken-winded through being driven hard or fast on a distended stomach or from eating too much inferior hay. It would pay better to hire

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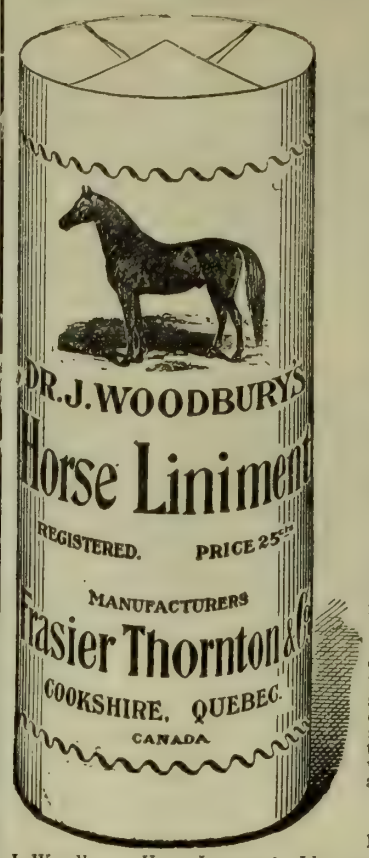

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than to keep a horse in idleness, but when this is impracticable or inconvenient the well-being of the horse should be studied by providing regular exercise. Without this the animal cannot be properly fed, and so kept in condition to work when required.

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"Do you want to see the mare's colt? It is in the shed. We can lead it any place." A hired man who was driving a team of big purebred mares proudly spoke these words. We went to the shed and sure enough there was the colt broken to halter, though not perfectly tractable, of course. He would have dashed for an open gate to go and find his dam. He preferred to play rather than to pose for his picture. He had been in training by the fond hired man for several weeks and had a good start toward becoming an easily managed horse.

I once knew two boys who spent a part of each evening teaching the farm colts to lead. The boys sometimes worked together, and sometimes they worked singly. If either was alone with a colt he carried a whip in his left hand so that he could reach behind himself and tap the colt lightly, encouraging him to walk up beside his young master. The boys were never abusive with the whips. The colts were taught properly to lead and they never forgot it. As yearlings and two-year-olds they were perfect in manner at the halter. At three they were put to work; no breaking was required. They work quietly and steadily and with full confidence in the driver.

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They were always more satisfactory and better horses for having been handled and taught to lead while young.

Changing their Coats.

The season of the year when horses are changing their coats is, as a rule, a most trying period. Very few horses at work pass through it without becoming obviously out of sorts; they are "off color," out of working condition, labor mechanically, and become easily fatigued. Horsemen describe the condition as "having the blackberry on 'em," and certainly the blackberry time is rightly regarded as a critical period by all who have the care of working horses. Where it is possible horses should at this season be eased in their work. The effort involved in growing the winter coat seems highly debilitating to the horse that has to work as well, and the debility is increased by a heated stable and thick clothing. Therefore eschew the hot stable and the thick clothing while the summer coat is being shed and the winter covering is growing long enough to clip, and instead assist the process by extra grooming. If necessary, and not because of the roughness of the coat, give a little tonic medicine or a few "condition" powders. Do not, however, depend on the medicine alone; let the grooming be more vigorous and increase the nutrient constituents of the diet. Try to infuse a little variety into it, too, and provide a few carrots and some linseed. Linseed will be found especially useful at this season of the year on account of its effect on the skin and coat, and its promoting the digestion and assimilation of other articles of food. The best way to use linseed is to put 1 lb. of clean seed into a gallon of water in an earthen vessel, and let it stand covered for twenty-four hours, stirring occasionally. A pint of this mucilage and seed given every night is as much linseed as a horse ought to get. Exercise care, and spare the horse in every way until the critical period is over.—Veteran.

About Shying.

It may be doubted whether horses ever shy because of distorted vision. Defective eyesight does not necessarily give rise to shying. Take the case of a horse which shies at certain objects, such as a heap of stones or mud-scrapings lying at the roadside, and let us assume that, owing to impaired vision, it gets a distorted view of these objects. How is the animal to know that the object appears distorted to it? The heap of stones, perhaps, does look to it somewhat different from what it really is, yet it must be all the same to the horse whether it sees a heap of stones or a sack of potatoes or rubbish or what not, it being no worse off in that than a horse with perfect vision.

The Cause of Shying

By far the largest proportion of shyers are met with among horses of either a highly nervous temperament or else a very timid temperament—the latter especially. There would undoubtedly be a great many more cases of shying among well-bred horses, which possess a decidedly sensitive nervous organism, if it were not for the fact that the high courage characteristic of them, neutralizes their constitutional nervous tendency. This explains the fact why entires are so much less liable to shy than mares.

In Young Horses

It cannot be too strongly insisted upon that a young horse needs to be treated with the greatest forbearance and gentleness when it shies or makes a feint of shying on meeting anything which excites its apprehension. It should be cajoled and spoken to soothingly, so as to allay its fears and give it confidence. Given such patient management all tendency to shy will, in average cases, sooner or later, be overcome. If, on the other hand, harsh methods and punishment are resorted to the animal being forced past the object of which it is afraid at the point of the whip, the consequences may be disastrous. Such irrational procedure is a prolific cause of turning young horses into confirmed shyers. The animal comes to connect the sight of an object which excites its fears with punishment, and its shies from sheer apprehension of being punished whenever an unfamiliar sight is encountered.

The Confirmed Shyer.

Once the habit of shying has become firmly ingrained, whatever the original cause, it is practically impossible to cure, even with the most patient treatment, and the less one has to do with a bad shyer, especially for saddle work the better. The most suitable place for such a horse is in double harness where it cannot do much, if any, harm, for though it may attempt to shy its mate usually will prevent it from actually swerving or stopping dead. It is an established fact that horses are less liable to shy when driven in harness than when ridden. This is partly, perhaps, owing to their wearing blinkers, which prevents them from seeing some things which might otherwise startle them, but it is also largely due to the fact that, being harnessed to a vehicle, they cannot swerve or break out so easily as when carrying a rider.—F.

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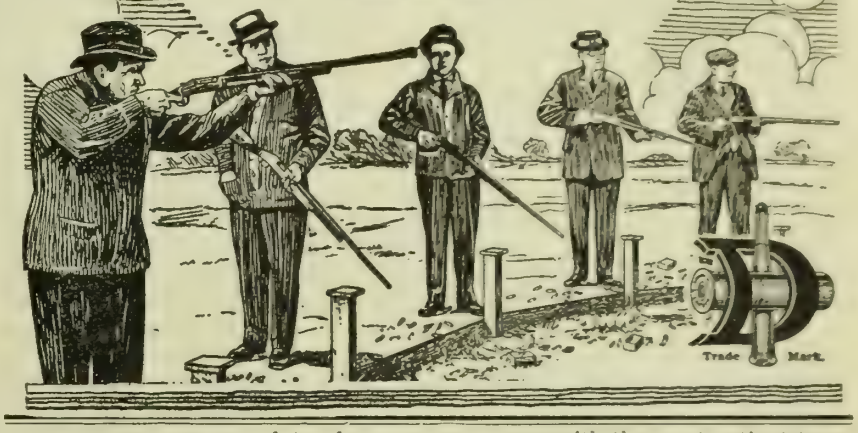

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POULTRY

An Opportunity for the Girl in Rural Parts.

A convention of more than ordinary interest to the rural community has just been in session at the Ontario Agricultural College. It was called the School for Rural Leadership, and from what I could gather after attending a few of the meetings I feel confident that we will hear of some wonderful changes and doings in the country as a result of it.

There were many good speakers who brought out the needs of the rural districts; co-operation is the key note to success and the various organizations such as the churches, schools, Women's Institutes, Farmers' Clubs, and so forth, can do much to help solve many problems if they work hand in hand to avoid duplication.

Besides the good addresses that were given, the discussions at the close of each seemed to be even more interesting and came directly to the point. One of the talks that interested me most was on town and country co-operation, and the reason I speak of it particularly is because the question of the girl leaving the farm to find employment in town was brought up. It always seems to be the same old cry about the farmer's daughter, but what about the town girl, doesn't she want to earn her own living? But no one says a word about it because she can live at home. We are all inclined to think that the farmers' daughter in order to earn her living must leave home, but it is not so, and this is just where she has the advantage over her city sister as she has so much more scope and opportunity with endless raw materials at hand to deal with. For instance, one of the things mentioned (and I was so pleased to be there to hear it) was poultry keeping, as an occupation for the girls. If the farmers would give their daughters a little start in this direction by furnishing them with some good pure-bred stock, to be proud of, and a suitable hen house, and if possible a short course on poultry keeping at the College, they would have some stock in trade, and I feel quite safe in saying that many a farm would become quite noted for many, many miles for its fine poultry.

Another branch of work that the girls might follow is to make jams or jellies and specialize in whichever branch they can do best. The demand for these home-made delicacies by the best shops in our cities is unlimited, as such things are eagerly sought for by business women who have their own apartments where they get their own breakfast and evening meal. Vegetable canning and beekeeping weer also spoken of. Are we going to were also spoken of. Are we going to think they are good and worth thinking about.

Line Breeding Fowls.

If there is any difference between line-breeding and inbreeding so far as hereditary mechanism is concerned I have not yet had it explained to me. Linebreeding is a form of inbreeding which operates in a special way. Felch's chart, which diagrams what he calls linebreeding, provides that a start shall be made with a single pair of fowls. The male used in this mating is mated to next year with his daughters and the female with one of her sons. The third year the original male will be mated with his granddaughters and the original female with one of her grandsons. This produces two lots of chicks, those of the male line being 7/8 of the blood of the original male and those of the other lot being 7/8 of the blood of the original female. Now a male bird of the male line is mated to the female of the female line, and the result is chicks which contain exactly half of the blood of the original female. Then the series is started over again and goes on indefinitely. This is intensified inbreeding but many call it linebreeding because it sounds less offensive.

Whenever I say anything in public on this subject, I always insist that it is a dangerous method unless the breeder knows how to select breeding stock that is absolutely sound. The production of weak chicks is not so much the fault of the system as it is of unsound parent stock. At our house we never take any pains to save the life of weakly chicks. If they have not enough vitality to live with ordinary good attention we let them die without regret. We have lost just two chicks this year from causes that might have originated in a lack of vitality. There are probably several billion vigorous English sparrows in this country, yet every one of them is descended from half a dozen pairs that were imported a few years ago, and they have inbred to the limit without impairing their vitality.

Our best investigators are agreed that inbreeding is the only way to arrive at definite results. Those who firmly believe in Mendelism will say that there may be a vast biological difference between two descendants of the same parents, and they have considerable evidence in support of their position. I firmly believe in inbreeding, which I usually call line-breeding, but I just as firmly believe that it should not be practiced by amateurs or those who can not select perfect breeding stock.—Miller Purvis in Breeding Gazette.

Forcing the Molt.

Forcing the molt was quite the vogue among poultrymen fifteen years ago. It was originated by the late Henry VanDresser, who made it quite popular. Later Prof. Rice, at the New York Experiment Station, made some careful experiments with this system. He kept a year's record of hens forced to molt early and quickly and of others allowed to molt in the natural manner. His conclusion was that forcing the molt did not add to the number of eggs which a hen would produce in a year, nor did it increase the winter-laying; therefore, it would be a waste of time to force the molt in any fowls for ordinary purposes. If one wanted to fix up a lot of fowls for the early winter shows the forced molt would be all right.

The method was to reduce the feed gradually, beginning in August, until the flock would be on quarter rations. The fowls were kept on this short ration until they began to lose flesh, when they were gradually fed more until they were getting all they would eat of the most nourishing feeds available. Shortly after getting back to this full feed the fowls would begin to drop their plumage and often become almost naked in a few days, after which the new feathers would appear in due time. Prof. Rice prefers to keep his hens on full feed and let them molt in the natural way, as they will then lay some eggs during the molting season, while if forced to molt they stop laying entirely for several weeks, usually about 10 to 12.—Miller Purvis in Breeders' Gazettte.

Purchasing Breeding Stock.

The question of "when is the right time to buy stock?" is one that is confronting many. Whether, wanting to add one or two stock birds to your flock or wishing to purchase a pen of a dozen or more birds, now is the time to see about it. The best birds are always picked up first and the late comers have to take what is left, and besides getting a poor bird, often have to pay twice as much. Never wait until the spring to buy your breeding stock. In nearly every case you will get birds that were late hatched and consequently immature.

For the prospective poultrywoman who hasn't made up her mind which is to be her favorite breed it is a good plan to visit a good poultry show and there see all the breeds and their best. The Maritime Winter Fair will furnish a good opportunity for this, and all those who are interested in poultry should not fail to visit it, as it will help to settle the question of what breed to get. If the big shows cannot be reached any of the smaller ones will help. When a decision is reached the next step is to communicate with a good reliable breeder.

The woman who raises her own chickens is fortunate if she can produce her own stock birds, but so often this is an impossibility if she hasn't sufficient land or doesn't feel sure of her ability to choose the best birds from her flock. In this case she should purchase from a sources which will furnish her with the best type of bird, and above all get birds from the same strain year after year and thus establish the good qualities in her own flock.

Bleached Shanks in Layers.

Trap-nest records with many hundred fowls at the Maine station make it possible to say positively that no bird which has been a heavy layer will have bright yellow legs at the end of the laying season. Prof. H. R. Barrows says tht a "200-egg hens always have white legs at the end of their pullet year." The yellow coloring matter in the legs and skin seems to be used up in coloring the yolks for so many eggs, and thus the skin and legs bleach out nearly white.

It is worth while knowing this when culling the flock in the fall and deciding which pulelts to keep over to use as breeders the next year. If the poultryman has no trap-nest records the color of the shanks furnishes him one of the best indications he can have as to the way in which these pullets have laid during their first year of life.

His first selection should always, of course, be on the strength and constitutional vigor, but after having picked out the good strong, healthy birds he should then choose from among those the ones which show the whitest legs. Poultrymen often make a mistake on this point, frequently practicing just the opposite—that is, picking out carefully those which have yellow legs which are the poorest layers in the flock.

Feed Well and Wisely.

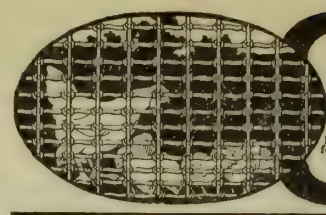
The need of feeding hens a well-balanced ration is shown by Missouri experiments. Four pens containing five hens each were treated just alike, except for the feed.

The test with a wide ration, containing elements which would produce three yolks for each white, laid 379 eggs in the first six months.

The test with a narrow ration, containing elements which would produce two whites to each yolk, produced 269 eggs.

The test with a ration containing equal yolk and white material, but without minerals to produce the shell, produced 161 eggs.

The test where the ration contained elements necessary to produce equally all parts of the egg, produced 1503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eggs in the same time. This ration is called a balanced ration for egg production.

The following ration is fairly well balanced for egg production: One-hundred and fifty pounds each of cracked corn and cracked wheat, 20 pounds each of wheat bran, middlings, corn meal, ground oats and gluten meal, 30 pounds beef scraps, five pounds each of alfalfa meal and old process linseen oil meal.

For hens having free range of the farm a very simple ration is made of equal parts cracked corn and cracked wheat and a dish of beef scraps to which they can help themselves.

Greater Scope.

(By Special Correspondent)

There is a tendency amongst Nova Scotians to discount their achievements. They do believe in themselves, are self-reliant, and originative. But they incline to doubt that the people of a small province have conceived and achieved big things. For instance, they took "with a grain of salt" the statement that in the new Science Hall of the College of Agriculture at Truro, the province possesses one of the finest educational buildings on the American continent. They thought the claim extravagant until convinced by the testimony of visitors from the other provinces and from the United States that in beauty of structure, serviceable allotment of space and equipment for study, demonstration and research, both in physical and in domestic science, this hall is unequalled in Canada and unsurpassed in the American republic. It is easy briefly to justify the eulogies of visitors and to show the imperative need of such a unique Science Hall in Nova Scotia.

A Noble Structure

This "noble building for a great purpose," as a distinguished American visitor signalized it, is set high on the central knoll of the College campus. It is 125 feet in length, 50 feet in depth, and three storeys in height. Its walls are of handmade "rustic" red brick, which has the effect of glinting forth soft tones and tints of color, in contrast with the hard plainness and monotony which would result from walls built of pressed or wire-cut brick. Further beauty is added, and monotony relieved, by the plinths, facings, and pillars of the facade or front elevation, which are of chiseled Wallace gray free stone. The stairway to the main entrance is constructed of free stone, and concrete, protected with fluted steel treads. Inside, the Hall is finished with dark-toned oak; the laboratory desks and experiment tables are also of oak; and the fixtures are mainly in brass. The colorful finish and fixtures, with the abundant play of sunlight upon their surfaces, makes a handsome interior appearance. Modern heating and "forced fresh air" systems conserve health, and make for mental efficiency.

The necessity for such a spacious building arose from two considerations. At the same time that the number of male students of scientific agriculture was increasing rapidly, the short-term courses in dairying, poultry husbandry and Domestic Science for farmers' wives and daughters and other ladies interested in Home Economics had increased also the number of female students. For both sexes of students were without adequate facilities for research in and demonstration in physical and domestic science. Unless such provision was made the college would fail in its mission to the people and thus pass as a modern educational institution. It was therefore wisely decided to erect a building which would afford ideal facilities for teaching and research in physical and domestic science.

Special Features

The women of the province have the unique distinction of having the whole of the top floor devoted to Domestic Science. On this floor are a spacious labaratory, desks, ranges, and otherhousehold apparatus and helps; also a room fitted wtih wash tubs and modern laundry apparatus. Fifty women can do practical work at the same time. But the striking room is the so-called Assembly Hall—spacious (50 feet by 45 feet), sunshiny and inviting, and fitted with movable furniture. Attached to it is a ladies' library and reading room. In the Assembly Hall will meet the various Women's Institutes. When not thus occupied, it will be used for practical work in domestic science and household arts. It allows no economic waste; for it is always adaptable and ready for some use in women's work.

On the ground floor are three private research laboratories—one for the chemist, one for the provincial entomologist, and the other for the investigator of plant pathology (diseases)—and a large class-room, capable of accommodating 160 students, but at present seated for only 80, so as to allow each student double space for lectures and laboratory experiments. The basement, which is essentially on the first floor, contains a general chemical laboratory, providing accommodation for 48 students working at the same time, and colset room in each desk for apparatus for four times that number. Also on this floor is another chemical laboratory, especially adapted for handling and experimenting with soils and fertilizers—materials that would spoil the cleanliness of the general laboratory. In addition, there are three dark-rooms for photograph-work, and two incubators for growing and experimetning with bacteria and plant disease organisms. There are protected rooms for storing chemicals. The men's lavatories are above the boiler rooms, which have been sunk below the basement, thus making the building consist of three full storeys. From every point of view, then,—beauty, and durability of structure, educational scope and utility—the Science Hall of the College of Agriculture is a noteworthy monument to the progressive spirit of Nova Scotians, and signalizes the dawn of a new epoch in the teaching of science in the little province that has given to Canada her greatest educationists.

Latest Move.

(Special Correspondence to Maritime Farmer.)

Cheap and durable underdrainage is the latest practical move the Nova Scotia Department of Agriculture is making to encourage better farming in the province. In addition to the traction ditcher, which has been in use for some years, the government has purchased and is operating a portable concrete-tile manufacturing machine, which has already proved to be of great service. Near Lyons Brook, Pictou county, where there exists a live interest in underdrainage, this machine, for the last two months, has been in commission amongst the farmers of that district, and has manufactured 31,000 tile, 3-nich to 8-inch sizes.

The use of the machine means several important advantages to farmers. They can manufacture filed tile on their own farms, if gravel and sand are readily obtainable. Moreover, it happens that in Nova Scotia most farmers are located at considerable distance from a tile manufacturing plant. This and the fact that the freight they have to pay on such a bulky article as tile, disinclines them from underdraining their farms, even though that underdrainage is essential to a large proportion of the lands in the province. But by use of the portable tile-making machine, farmers can not only use it on their own properties, but also employ their own labor in all the processes, and thus need not put up the spot cash which would be required from them by the tile plants and the railroads.

Then there is the co-operative advantage. The Department of Agriculture ships the machine to and from the centre or district that asks for its services, and also pays the travelling expenses of the operator. For their part, the farmers sign an agreement to manufacture not less than 20,000 tile for use in their district, and to unload and reload the machine at the centre railway station. In all this the farmers co-operate amongst themselves and with the government to the mutual advantage of all parties concerend.

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County Agricultural Representative Repays His Salary Several Times Over—An Outline of Some of His Activities.

Less than a year ago, the Departmetn of Agriculture of the Province of Nova Scottia appointed as their representative, to look after the agricultural interests of Antigonish County, Dr. Hugh McPherson. Since his appointment Dr. McPherson has actively devoted his attention to many lines of work calculated to advance the agricultural itnerests of his native county. Perhaps no more tangible line of work, capable of interpretation in terms of dollars and cents, has been carried on by Dr. McPherson than the co-operative marketing of wool which with the aid of H. L. Hewson of Amherst, he organized. Mr. Hewson, who has always been interested in promoting the sheep industry of the Maritime Provinces, has recently been giving attention under the Federal Department of Agriculture to the proper marketing of wool by the farmers. Dr. McPherson at once sought his assistance.

Commonly wool is washed and without being graded is sold to the retail store. In the process of washing and rolling all grades of the wool become more or less intermixed, and proper sorting is rendered very difficult. The best buyers prefer to get their fleeces unwashed and properly rolled so that they can sort the wool themselves. It was in this way that the Antigonish wool which Dr. McPherson assisted in marketting was prepared.

Altogether a little over 12,000 lbs. of wool was marketed under the co-operative association which Dr. McPherson organized. The average price realized for the unwashed wool was a shade better than 36c in comparison with from 36c to 38c for washed wool which was being paid by the ordinary trade, and when it is considered that wool shrinks from 25 to 50% in weight in the process of washing it will be observed that Dr. McPherson and Mr. Hewson thus realized about 10c per pound more for their wool than if they had sold it in the ordinary way, or in the aggregate rather more than $1200.

Another line of activity with which Dr. McPherson has identified himself has been in assisting farmers to buy their commercial fertilizer supplies co-operatively. Several carloads of those fertilizers recommended by Dr. McPherson were bought by farmers in Antigonish and Cape Breton counties last spring. One single Agricultural Societyt in Cape Breton by purchasing in this way saved $600, and other bodies of farmers saved correspond-ing amounts.

Now a short sighted view might make it appear that the money thus saved by co-operative buying and selling being lost to the retail trade. It did not represent such a large saving as appears on the face, but the facts are that when farmers can buy fertilizers more reasonably, and sell their goods more profitably, they purchase larger supplies, grow bigger crops, derive bigger returns from their farms and so add to the prosperity of the whole community in which they live. Ultimately every line of trade benefits from the prosperity of the farmer, and therefore every one, who is interested in the welfare of the country, is bound to indorse these lines of activity by which the farmers through organization are able to make bigger returns from their farms.

Besides these lines of work Dr. McPherson organized and carried on a short course in agriculture in the town of Antigonish last winter at which there was an average attendance at each session of something over 200 farmers. Also, he is carrying on experiments with various fertilizers on typical soils of the county which will form the basis for a still more intelligent system of fertilizing the land. Under his guiding hand, too, a seed centre constituted of farmers who are interested in growing seed of the highest quality on their own farms has been organized, and is already in an improvement of the character of farm crops on many farms, the subject of comment of every agriculturist who has had the opportunity to visit Antigonish of recent years.

Dr. McPherson is not alone in the work which he is carrying on, but has the backing of the county council, and the Board of Trade of Antigonish, both of which bodies gave handsome donations towards the erection of a Demonstration Building suitable for carrying on classes in agriculture and also containing the offices in which Dr. McPherson makes his headquarters.

A forward movement has certainly begun in earnest in Antigonish county. In addition to the various lines of work already described, two new creameries have been constructed in the outlying parts of the county within the past two years and there is an agitation for still further development along these lines. Antigonish county, which for years has made little if any progress, is now developing in earnest, and if it continues to progress, as it has for the past two years, is bound to take a foremost place among the counties of Nova Scotia. When some historian writes up the history of this wonderful growth he will find that not the least of the agencies which have led to the development has been the work of the county agricultural representative, Dr. Hugh McPherson.

When to Dig Seed Potatoes.

The prevailing opinion amongst growers regarding the condition the potato crop should be in when harvesting the tubers for seed is that the plants should be dead, or, as it is termed, quite ripe, and that the crop should not be lifted until a fall of rain has occurred. However, experiments for some years past in Great Britain show that seed dug in an immature state, while the plants are quite green, always give the best satisfactory yield.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

The Homeville Cyclone

By Raymond Comstock.

The first gray days of November, with the chill frostiness of the air and the rustling of fallen brown leaves, were announcing the coming of winter. It was late in the afternoon. Down the dusky village street drifted the whitish pungent smoke of leaf fires, and before two or three doors the red ask glowed into the cool dampness of the falling night. Ned Malcolm and Cherry Gildersleeve came walking briskly along the path toward the square white Gildersleeve house.

"It is too bad, Ned," said Cherry for the twentieth time since she had met the lad before the post office. "I don't know where The Copper Circle can meet now, unless we begin having it 'round among the houses, and that soon breaks up the attendance. Why, oh, why, did that cross old Mr. Bascom have to come home and spoil our wonderful meeting place in the schoolhouse? Miss Heavens was perfectly willing to have us meet there, and it would have been fine this winter; but now Mr. Bascom has just spoiled everything."

Cherry's pretty red lips pouted in evidence of her dispelasure, and Ned dove his hands deeper into his pockets and scuffed up the dry leaves with his feet. He too was puzzling. The Cooper Circle, the social and good-fellowship club of the young people of Homeville had been turned out of its accustomed weekly meeting-place, the district school, and just then every member was wondering what they should do for a meeting-place, for the crowd of eager boys and girls that made up its membership. The club name had been the suggestion of Ned Malcolm, its president. Electricity is only of use for material purposes, when carried over a circuit of copper wire; what better name, then, for a circle in which the power of friendship was to form the warming and inspiring current, than The Copper Circle?

"Well," declared Ned pensively, "the schoolhouse wasn't any too good, anyway, you know, Cherry. What we ought to have is a regular club-house with a real library. Then, when we had our debates or parties, or when we wanted to spend a quiet afternoon reading, we could do it there. But I don't suppose there's much chance of our getting that for a while."

They had reached the white gate of the Gildersleeve home. In the darkness the red gleam of the fires glowed brightly along the street. The fragrance of the smoke and of the night dampness drifted to them. Cherry rested one arm on the gate and leaned back against the pickets, while the lad reached for the latch, in order to open it for her.

"That's just what I am thinking about, Ned," agreed the girl, not offering to go in. "We must have the library. You didn't know it, but I have been talking with several of the girls, and we all feel that there has been something missing in the spirit of our club. And I want to ask you what you think about it."

Cherry hesitated, wondering how the thing she was going to say would affect the boy, and not knowing just how to begin. But Ned Malcolm was waiting with the courtesy which had earned him the esteem of all his mates, and had caused them to choose him their leader. Besides, the sage suggestions of Cherry Gildersleeve had more than once proven the value of her clear little head.

"Go on, Cherry," invited the lad.

"It is this, Ned. We call ourselves The Copper Circle because we make a complete circuit for the current of friendship. But if we were really a copper circle through which electricity were running, and we were not connected with anything else, to give it the benefit of the electricity, we would be just waste copper. Current that goes round and round, without affecting anything but the wire through which it runs, isn't much good, is it? So we girls have thought that as a club we ought to have some outside purpose, some way of giving off electricity to make light or heat or something else for places where it is needed. And the libriary is the thing that is needed much more than anything else. If we could start a public library, so that such people as old Mehitable Matthews, and Danny Ellis, and the people out on the poor farm who have nothing to read, could get a book once in a while, wouldn't that be like sending out electric light to the people?"

Cherry clung tight to the gate with her gloved hand, and waited anxiously in the darkness to hear what the boy opposite her would say. Would he laugh at her idea She ought to have known Ned Malcolm better.

"It's a wonderful idea, Cherry!" he exclaimed. "It's simply wonderful! Nobody but a person with a big brain could have thought to make that clever simile about the electric lighting for this club of ours. You certainly ought to be the president instead of me. Now, all I ever think of is how to keep our club together and such things as that, while here you are conceiving a wonderful scheme for making us a really valuable part of the village. It's fine, and we'll push it ahead, even if we have no regular meeting-place. We're going to give off current." He was wildly enthusiastic, and the girl laughed delightedly.

"We'll meet at my house on Friday then, won't we, Ned?" she asked, as he opened the gate for her.

"Well, if your folks are willing," he agreed. "It's good of you to offer it. And goodnight, Cherry," he shook her hand, and tipped his hat. "It's a wonderful idea."

"Good night," she laughed happily, and ran lightly up the path. On the veranda she paused. From down the street she could hear his merry whistle and the scuff-scuff of his feet among the leaves.

"We're going to give off current," she murmurred. "We are going to give forth light in Homeville." She went into the warm lamp-lighted sitting-room.

* * * * * *

It was half past ten that evening when Cynthia Heavens, the young teacher of the district school, shut the book she had been studying and arose with a sigh to go to bed. The book was an old psychology, for Miss Heavens, in spite of the prolongation of her term at the Homeville school from year to year, still dreamed of the college education and the bigger achievement in the outside world, which had inspired her early girlhood. At thirty, with the first flush of youth subsiding into the softer complexion of established womanhood, she still looked forward with girlish ambition to that sometime-to-come great day when she should go forth, an admitted scholar and leader, from the portals of a great university.

For thirty years Cynthia Heavens had dreamed; ten of those years she had waited as teacher of the Homeville school. At last, at the end of the present school year, she would be sufficiently on her feet, with no dear ones longer to provide for, and with no more old debts of theirs to hamper, to make the start of which she had dreamed. The end of the present school year, June, and it was November now. She went to the door of her little cottage to peer out at the brisk, frosty night, opened it, and stepped out on the porch. The stars gleamed cold and white in the wark sky. How quiet it was! Then she started and listened intently.

From below came a faint cry, the pitiful wail of a baby. It was at her feet. She bent to look, and discovered a tiny bundle lying half-hidden beneath a bare lilac bush close to the porch. Trembling with anticipation the girl hastily pushed back the twigs, and gently, ever so gently, raised the little bundle from its position among the rustling leaves. For a moment she sttared down upon it unbelievingly; then, obeying the instinct of her sex, she pressed it close to her breast, and hurried into the warmly lighted sitting-room.

But once within, Cynthia Heavens knew not how to act. A baby! In her care! What should she do with it? Whence had it come? Wondering, she undid the blanket and gazed on the wee pink face and the staring blue eyes of her night find. One look was enough. The hungry heart of the lonely teacher leaped out to this morsel of humanity that had come upon her hospitality, and she caught the baby to her breast and pressed the tiny face with her lips, while hot tears slowly trickled down cheeks that had not known tears for many months.

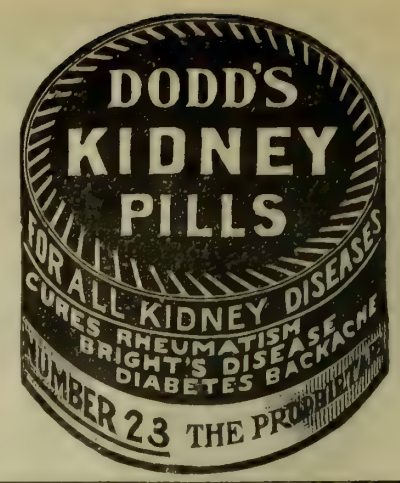
"Oh!" she wept quietly. "You darling! You little breath of love from the skies! I don't know where you have come from, but I want you. Oh, I want you so much, to keep you here with me!"

Again and again she kissed the little face. Then action supplanted adoration; she hurried to the closet for milk, and began to heat it over the fire. And as she did so she talked alternatively to herself, as she was accustomed to do, and to the baby on her arm.

"It'll be a racket in the village if they learn I'm going to keep you, you little darling. They'll all be going wild with the thought that a real mystery has come to Homeville." She kissed the bay tenderly, and stirred the milk. "You'll set them all whirling like a Kansas cyclone. A regular cyclone coming to our village, you baby from the night. I wonder if God just let you fall from the sky, like the leaves falling from the trees. And what shall I call you, little cyclone? Cyclone? Cy, or shall it be Sigh? A sigh from the angels for lonely me."

Tenderly she cared for the little one; gently she prepared it for its sleep; and when at last Cynthia Heavens closed her eyes in slumber that night it was with one hand resting protectingly on the arm of the big rocker, which formed the little foundling's improvised cradle.

Perhaps, had the warm-hearted teacher known how great a cyclone she was harboring in the adoption of the little foundling, she might not have slept so easily that night. Homeville buzzed like a hornet's nest the next day. The gossips of the village talked from dawn until dark; ere nightfall of the following day, Miss



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Heavens had received calls from a large part of the population of the little place, and from not one, but nearly all had come some form of advice.

One would have thought that this would have been in the form of kindly suggestion; instead it was chiefly in warning as to the foolhardiness of her decision to keep the waif. She could not do that and her teaching too; she would end in the poorhouse, where the baby should be sent, and she would become a public charge. To this prediction the teacher replied; to most of the advisers she had but a polite "thank you," that might have meant agreement or not. But that she would become a public charge, she declared, was her lookout, and when that time drew near, she would value more sincerely such suggestions. Meanwhile the baby stayed, unless its rightful guardian appeared to claim it.

But the climax came with the visit of Mr. Bascom, the head of the school trustees. Short of speech and irascible as usual, he came just at nightfall, and in the lamplight, the girl greeted him. His reply to her invitation was a growl; he came into the sitting-room as if he owned it, for was it not through his acquiescence that the teacher held her position Laying his hat on the table and turning to her, he put his question abruptly.

"Look here, Miss Heavens. What's this I hear about you adoptin' a baby? What's the truth of it?"

Cynthia Heavens turned a little pale, but her lips were pressed determinedly together, as she put down the lamp and turned to her visitor.

"That is the truth, Mr. Bascom." she informed him quietly. "The baby was left on my porch, and I am going to keep him."

"Well, you can't." Jared Bascom's words were short. "You take him to the poor-farm tomorrow. That's the place for picked-up babies; and not in the charge of school teachers." He picked up his hat and turned as if to go, but the girl stepped forward.

"Mr. Bascom, I am not going to take him to the poor-farm. He is mine now, and I am going to keep him. I don't see why you should interfere with me in this."

"You don't!" The irascible old man was dumbfounded at the audacity of the teacher in refusing to obey him. "You don't! Who am I, anyway? Didn't I tell you that you was to? Ain't I the head of the school committee? You take that baby over there, or I'll turn you out to starve. D'ye hear me?"

Cynthia Heavens turned white. To lose the school position on this, the final year| To be turned out now! She saw her dream of the university fading away in the dim distance; she saw visions of herself homeless during the winter. It was not worth it; she must yield. Then from the next room came a little wailing cry. The old man started at the sound, but his eyes came back fiercely on the slim pale woman before him. It was a call from the heart of the baby to the heart of the woman. Cynthia Heavens did not waver now.

"Mr. Bascom," she said smoothly, determinedly, "you may have been able to turn out your own boy, because he married the girl he loved. You may be able to feel that he is struggling along by himself heaven only knows where, without your backing and your blessing. You may be able to dispossess poor old Mehitable Matthews and still not have your conscience spoil your sleep. But if you send that little helpless baby into the public poorhouse, I hope you will never sleep again. And if you insist on my giving him up" (the scowling gray old head nodded insistently), "then I tell you I won't. And you can discharge me whenever you please. If there is a God to protect the birds of the air, he will care for me and this tiny baby. Now, good night! I don't want you in my house."

Picking up the lamp, her face white and her breath coming in little sobs, she went quickly to the door and held it open. Trembling with fury at the defiance of this insubordinate teacher, and stung by her reference to his disinherited son, Jared Bascom stamped out. On the porch he stopped to point a threatening finger at her.

"You wait till the cold weather comes on!" he exclaimed; but the door swung to, leaving him in the darkness. Inside a pale-faced woman hurried into the back room and clasped a tiny bundle in her arms.

"Darling baby," she whispered. "My little Cyclone, from out of the darkness. May you never know what you have cost me tonight."

* * * * * *

"Ned! Ned! What you you think that cruel old Mr. Bascom has done " exclaimed Cherry Gildersleeve, as she greeted the president of The Copper Circle on his arrival at her home for the meeting on Friday evening. "Father has just told me that Mr. Bascom has discharged Miss Heavens for keeping the little found baby. Oh, I think he is cruel. She has no way of supporting herself now, and the winter is coming on. And father says that Mr. Bascom was perfectly furious with her for daring to keep the baby, when he had ordered her to put it in the poor-farm. He said that it would interfere with her [illegible] but I think it is because he is just too mean to see anybody happy. I don't wonder his own son married and went away from home."

Ned Malcolm listened quietly to the story from the lips of the pretty lass, but his dark eyes flashed indignantly.

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That was too cruel, too unchristian. He felt that the old man deserved condemnation, but the boy had learned to withhold judgment, as few mature persons learn. Quickly he thought over the conditions. The teacher was giving up her position for a principle of Christian kindliness, trusting that she would be cared for. Like a flash of inspiration from above came the knowledge of what he should reply.

"It does seem cruel, Cherry," he admitted quietly. "And surely Mr. Bascom will not be half as happy over it as Miss Heavens, whom he has wronged. But maybe this is going to offer up our first chance to give off current. It's going to be a cold winter, and a little electricity ought to be welcome to Miss Heavens."

"O Ned, Ned! What a wonderful idea!" gasped Cherry admiringly.

So, when the members of The Copper Circle came together there a few minutes later, Ned Malcolm called upon Cherry to tell them of her idea about the copper-carrying current to some place where it was needed, and then to describe to them the scheme to aid the teacher. With the warmth and generosity that is characteristic of young people, they agreed enthusiastically to the idea, and plans were made for a systematic care of the brave young teacher and her little adopted ward.

It was decided that the different girls should take turns in dropping in to see and show their friendship to the teacher, to aid her in any way they could. To the boys fell the heavier duty of seeing that a supply of cut wood always lay ready for use in the shed behind Miss Heavens' cottage, and that the basket of necessary food appeared at regular intervals on top of the wood. And all this was to be done without a word or an explanation to the teacher herself.

That night, with hearts that beat happily in the joy of anticipated service, and with a longing to begin their mission of giving forth a light and warmth through their current, the members of The Copper Circle went through the dark streets to their homes. And during the ensuing week such a change in various sons and daughters was apparent to the mothers and fathers of Homeville, such thriftiness, such an eagerness to turn their hands to anything that might earn a few pennies in return that the grown-ups watched in wonderment.

"And when the first basket was packed, and into it was slipped a little home-made linen bag containing five dollars in bright nickels, dimes and quarters, such a thrill of happiness radiated through the group, as no current of internal friendship had ever given them.

"Why!" exclaimed Cherry happily. "There's a lot more electricity in the wire when its giving off current, than when it is keeping it all for itself." That was a bit of the greatest philosophy that Cherry had uttered, the secret of the world's happiness and contentment.

Then a note with the message: "For the little Cyclone, by electric wire," was laid on top of the goods, and the whole covered tightly. Two of the boys stole quietly from the house to carry the gift to the woodshed behind the little cottage, while the rest of the Circle crowded to the windows to watch them on their way across the silver-lighted fields.

A month passed. The year was drawing to a close under a deep mantle of white; the weather was crisply cold, until the horses' hoofs squeaked and the sleigh-runners ground in the powdery hard snow; and jingling bells sang the song of winter on the frosty air. One evening the cyclone baby lay snug and warm in its little homemade cradle, while Cynthia Heavens sewed in the grateful warmth of a tall heating-stove, and hummed to herself with a happiness that was greater than any she had ever before known. Miraculously it seemed, she had been provided for. Her faith had been rewarded fully; her assurance as to the future was unlimited.

From outside in the darkness came the jingling of a fast-driven sleigh, a loud "whoa," and the crunching of footsteps on the path leading to her door. A knock sounded. She arose, laid down the sewing, and, lamp in hand, opened the door to behold Jared Bascom, muffled to the ears against the biting cold and with him a tall young man, a slim, pretty little woman. Cynthia Heavens stepped back in surprise.

"Won't—won't you come in?" she asked.

The three came in, stamping the snow from their shoes; the young man took off his hat and muffler, and the teacher started in surprise.

"Joe Bascom!" she exclaimed.

He came forward, his hand held out.

"Yes, Cynthia, it is I. And this is my wife." The pretty little woman came forward and held out her hand which shook as if with excitement. "We have come on a strange errand, Cynthia, and because we owe you a great debt. You did not know it, but you have done us a great ——"

From the next room came the faint wailing cry of the baby. Pretty little Mrs. Bascom started and trembled violently.

"O my baby! My baby!" she whispered, and ran into the back room. Hastily they followed—the young father eagerly, Cynthia Heavens with mingled feelings, old Mr. Bascom nervously, his hat crumpling and opening in the clasp of his wrinkled hand. There was the little mother, her baby held close to her breast, while her tears fell fast upon the little one. "O baby! My baby!" she was sobbing happily.

For a few minutes there could be no explanations, and the teacher, who was torn between her love for the baby and her joy in the joy of its mother, strove in vain to find out the story of its coming to her. At last the young father released his family from his arms long enough to explain, turned to his little wife. "Tell her, dear, how much we owe her," he said, gently.

For a moment the pretty woman tried to speak. Then, words failing her, she threw her arms about the neck of Cynthia Heavens and wept her happiness out upon her shoulder. Tenderly the teacher kissed the little mother.

"I shall always feel that little Cyclone is part mine," she whispered, with a touch of forlornness.

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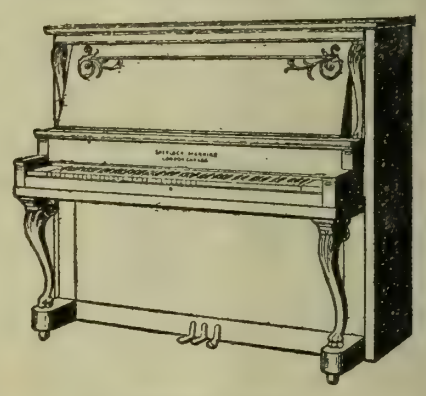

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There was a husky cough from behind.

"Er—er, Miss Heavens," broke in the old man. "I—er—owe ye an apology that I can't tell in words, for this that ye have done for me and my boy. Joe here, he's coming home to live with me now, and it's through you that he's coming in this direction. Besides," the pride of the old man stubbornly insisted, "my grandboy 'd ha' been in the poor-farm if it hadn't been for you. There ain't much I can say for myself about this now, but I'm going to make up to ye for taking away your position in the district school." The old man paused a moment, scratching his head thoughtfully while the teacher waited in embarrassed silence. "I ain't exactly what ye'd call a poor man, Miss Heavens, and I been figuring that maybe I could make it up to ye in part by putting some cash in the bank in your name. Would a thousand dollars seem to cover your loss and kind of make ye feel a little friendlier towa'd me?"

Cynthia Heavens gasped. That did not seem right; it was too much. She had only done what seemed to her her duty. But Joe Bascom intervened then.

"You must take it, Cynthia. It's partially from us, too, and I know what you have been wanting to do ever since you came here to Homeville. This is a means to the university work, and it helps dad to feel a little easier in the matter."

"But," protested Cynthia, "I have not done all. Someone else has saved both the baby and me from the poor-farm. It has come every night, wood or food or money, always to keep us alive."

"'It' has come?" echoed the others. "Who? How?"

There was a bang from the shed behind the house, a series of heavy bumps, and a little scream of fright in a woman's voice. All started. Quickly Joe Bascom sprang through the door and out toward the shed. Voices from without arose in protest, girls' voices and those of boys. A moment later they came into the entrance, Joe Bascom clasping two lads by the arms and marching them in, protesting, while behind came two of the girls

Once within, the tall young man released his hold on the lads' arms, and stepped back from them.

"Now," said Joe Bascom, "tell us what you were doing in Miss Heavens' woodshed."

But the teacher came forward.

"It is clear now; don't you see, Joe They are the ones who have been bringing me the things." She turned to Cherry Gildersleeve. "You are, aren't you, Cherry?"

Cherry, blushing prettily, nodded.

"Not just we, Miss Heavens. It was The Copper Circle. Tonight the sawhorse tumbled down from the pile and spilled all the wood, and I screamed, and now—now it's all out." She paused ruefully, looking at each of her companions and then at the gathered group.

Joe Bascom came forward

"Tell us more about this Copper Circle, Cherry," he suggested.

Simply the girl told; of their idea of giving off current; of their original plan of starting a public library in the town; how they had discovered the need to help the "little Cyclone"; and how they had carried out their scheme from week to week. Intently they listened, and before she had finished Cynthia Heavens was crying quietly, and old man Bascom was blowing his nose profusely and frequently. But when she stopped, he spoke:

"That idea about the library is mighty good, Miss Gildersleeve, and you and the others in The Copper Circle had jest better plan on starting it right off. I cal'late I know where the money's coming rrom. And sometime next week you drop in to see me and Joe, Ned Malcolm. I want to talk to ye about fixing up some kind of a place where this Copper Circle of yours can take care of its library. Mebbe the people here in Homeville think that old Jared Bascom is a close one, but he ain't when he sees something worth while to put his earnin's into."

"Ned " exclaimed Cherry impulsively. "Think of it. Our dream is coming true."

"We will all be very grateful to you, sir," Ned assured him quietly. "And believe me, sir, you'll find it's a good investment. Those things always come back, sir, and this time it will come in the respect of our young people. Good night, everyone."

Together the four went out and trudged across the snowy fields under a white full moon toward their homes. The next morning they learned of the finding of the "little Cyclone's" parents. And today in Homeville stands a neat club-house on the main street near the post office. If you should read the copper inscription over the door, you would see these words:

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'Let your light so shine before men '"
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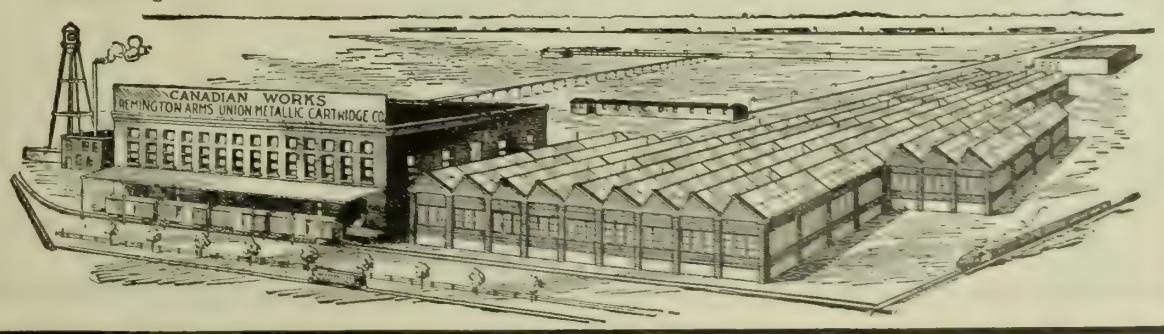


PALPITATION
OF THE
HEART.

Sudden fright or emotion may cause a momentary arrest of the heart's action, or some excitement or apprehension may set up a rapid action of the heart thereby causing palpitation.

Palpitation, again, is often the result of digestive disorders arising from the stomach, or may be the result of over indulgence of tobacco or alcoholic drinks.

The only way to regulate this serious heart trouble is to use Milburn's Heart and Nerve Pills.

Mrs. J. S. Nicholls, Listowell, Ont., writes: "I was weak and run down, my heart would palpitate and I would take weak and dizzy spells. A friend advised me to try Milburn's Heart and Nerve Pills, so I started at once to use them, and found that I felt much stronger. I cannot praise your medicine too highly, for it has done me a world of good."

Milburn's Heart and Nerve Pills are 50c per box, 3 boxes for $1.25; at all dealers, or mailed direct by The T. Milburn Co., Limited, Toronto, Ont.

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS.

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency), on certain conditions.

Duties—Six months residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3. 0 per acre.

Duties—Six months residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stoney land. Live stock may be substituted for cultivation under certain conditions. W. W. COREY, C. M. G.

Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.—64388.

Minard's Liniment Co., Limited.

Dear Sirs,—I can recommend MINARD'S LINIMENT for Rheumatism and Sprains, as I have used it for both with excellent results.

Yours truly,
T. B. LAVERS,
St. John.

"IN TIMES OF WAR PREPARE FOR PEACE"

Plant fruit trees now, so as to reap the harvest when peace is restored. We can supply choice Apple trees, Ornamental trees and Shrubs, Raspberry, Gooseberry, Currant and Strawberry plants of our own growing at lowest prices. Bees and Beekeepers Supplies. Satisfaction guaranteed. Write for prices.

E. L. COLPITTS,
PETITCODIAC, - N. B.

Home Remedies.

Hot water and salt are very effective home remedies. A sudden sore throat will disappear rapidly if hot water cloths are wrapped around the neck, and a swallow of hot water, held in the mouth for a few seconds, will often relieve a sick headache. A nervous headache is relieved by applying hot water cloths to the soles of the feet and back of the neck. The patient should be kept quiet and allowed to sleep if possible.

The earache and toothache being the result of a cold, keep the patient in a comfortable position near a fire and allow him to sleep. In using hot applications, always remember to change them frequently, keeping them hot, for if allowed to become cold, they will do more harm than good.

Warm salt water held in the mouth will stem the flow of blood after a tooth has been drawn, and will often cure toothache. It is a good gargle for sore throat or hoarseness, and if drawn up into the nasal cavity will prevent the development of catarrh.

Tepid water and salt make a good emetic for one who has taken poison. Small doses of salt taken at intervals will relieve hemorrhage, and nose bleed may often be stopped by bathing the face and neck in cold salt water.

Always salt nuts well before giving them to the children to eat, as this makes them more palatable and digestible and prevents colic that is often caused by eating nuts. A half teaspoonful of salt will relieve this colic, causing the nuts to assimilate with the other food and digest.

Bathing the feet in warm salt water and then rubbing them with dry salt will avert a cold after getting one's feet wet. A salt bath is a good and bracing tonic.

The Japanese use salt as a dentifrice and have very firm, white teeth. It hardens the gums and keep them in a healthy condition. There are really no more simple or affective remedies than salt and water for many of the little ills that flesh is heir to.

When dry heat and the hot water bottle fail to remove rheumatic twinges, wring flannel out of hot salt water and apply to the affected parts. If the ear is filled with warm water and then after allowing the water to run out, plugged with a little cotton that has been dipped in olive oil or glycerine, it will usually cure ,the most stubborn case.

Health.

Bedtime.—It should be unnecessary to remark that no baby should be rocked or "patted" to sleep; at the same time, old prejudices die hard, and many young mothers fall victims to a pretty idea, and start hushing off their little ones when bedtime comes. It is, however, a wrong beginning to make, for once the habit if formed it is exceedingly difficult to break. and many hours of fretful wakefulness for the baby and nerve-racking irritation for nurse or mother are being laid in store. The baby should be laid down warm and dry, with every care to each detail of its comfort, well fed, and shaded from any light, even from the first day, and so accustomed to go to sleep unheeded and unrocked. Sometimes it will be awakened suddenly—possibly by some noise or exterior influence, possibly for a cause which cannot be determined; do not immediately take the child up, even if it is crying, but simply turn it over in its cot, soothing it with soft words as you do so, and giving it a teaspoon or so of cold water if it appears hungry. This simple process, carried on in the dark, or in the same subdued light which obtained before, will in ninety-nine cases out of a hundred induce the little one to go straight off to sleep again.

Of course, a baby should be laid to sleep on its side, in alternate positions each night, and care should be taken that the little ear is laid flat and not crumbled. Odly enough, people are far more careless than one would think possible about this matter, and

Firebox linings are extra heavy McClary Semi-Steel; best material for the purpose.

McClary's Sask-alta Range 420

linings are practically indestructible. Examine them at the McClary dealer's and you'll realize why.

SOLD BY ALL McCLARY AGENTS.

This perfected Union Suit is ideal for ladies

Its glove-like fit is permanent because knitted in during the making, and because the fabric will neither lose its shape nor shrink.

Its soft, comfortable smoothness is due to fine quality yarns and the even texture of the Spring Needle fabric.

Watson's Union Suits for ladies are made with the Klosed Krotch as shown —a feature of real lasting comfort.

If you prefer other styles, your dealer has them in Watson's—including Vests, Drawers, Corset Covers, Black Tights, Etc.

Insist on Watson's

THE WATSON MANUFACTURING CO. Limited

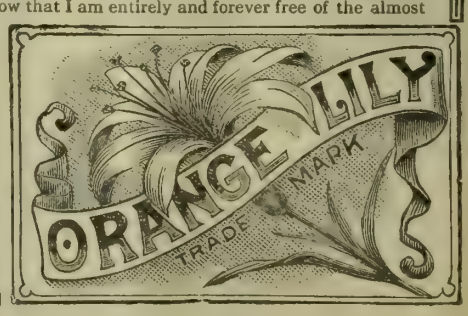
29 **Brantford - Ontario**

Watson's UNDERWEAR

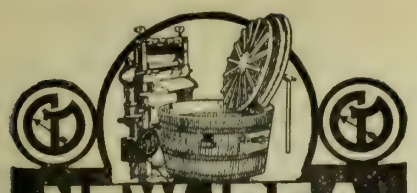
"Orange Lily"—the woman's friend—will transform your life!

If you are of that numberless host of women who silently suffer untold distress and agonizing pains caused by obstinate and long-standing disorders of an internal nature, let me make you this free and open promise—"Orange Lily" will transform your life!

I know the symptoms as well as yourself, for I too suffered for years before the discovery of "Orange Lily" home treatment. Now that I am entirely and forever free of the almost unendurable distress and pain of former years, I am only too glad to help others. "Orange Lily" is a local treatment that you apply yourself, without help, in your own home. A few days will work wonders and, like hundreds of others, you'll thank me for making known the good news to you.



Write me to-day and let me send you ten days' treatment of "Orange Lily"—absolutely free. It may save you from fatal complications later. When you are free from present troubles just tell others, that is all I ask. Address in full confidence Mrs. Frances E. Currah, Windsor, Ont. 12



NEW IDEA ELECTRIC

A Complete Power Laundry Outfit

Condensed into a

SIMPLE SAFE SILENT

machine that rivals the vacuum cleaner and sewing machine as a

HOUSEHOLD LABOR SAVER

It does everything by power, washes and wrings at the same time or separately. The wringer swings to and works in any position, in either direction, over stationary or other tubs. Full information mailed on request.

Ask your dealer about it 19-14

CUMMER-DOWSWELL, Ltd. Hamilton, Ont.

MADE IN CANADA

Employment Insurance

Technical training in some department of business service will give you absolute insurance against lack of employment. Skill in Typewriting alone will open the doors of many business offices to you. You should start at once. Get information today.

Moncton Business College

Geo. J. Schmidt, Principal

Moncton, N. B.

Opportunities for Girls

It looks more and more as if, owing to scarcity of skilled men, women will have to do much of the work hitherto done by men.

This is especially true of office work.

Of course, we are prepared to qualify either men or women to take advantage of their opportunities, and you can enter at any time.

Send for Catalogue containing tuition Rates, etc.

THE St. John Business College

S. KERR Principal

PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money, but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

BOOK ON

DOG DISEASES

And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER, V. S.

118 West 31st Street, New York

America's Pioneer Dog Remedies

Advertise in The Maritime Farmer and get Results.

undoubtedly many children owe protruding ears in later life to such carelessness in infancy.

Early Hours—Just a word must be said in conclusion on the importance of early hours. Six o'clock is a good bedtime for little children, certainly until they are six years old, and from then until they are ten the hours should gradually lengthen out until eight o'clock. There will be far fewer cases of nerve strain in school days, of irritability and fretfulness, even of indigestion, if such wise counsels prevailed in practice as generally as they do in theory.—Queen.

Rusting of Iron.

Rusting of iron and steel is natural and unpreventable, but it can be retarded in its rapidity of formation. On exposure to the weather iron combines with oxygen in the air and rust is formed.

Water (either as liquid or vapor) and oxygen must be present. Rusting is not merely the simple union of iron and oxygen but rust is the result of complex actions between iron, water, substances dissolved in water, as soil, dust, etc., impurities in the iron, ettc. In the changes occurring there are formed small electric currents between particles of the iron and of the other substances and oxide of iron results.

Some substances hasten rusting and others retard it. Those which aid are materials of an acid nature. Some forms of iron do not rust as readily as others. An iron which is worked well in its making and which is comparatively pure is especially resistant to rusting. Substances of an alkaline nature, such as quick lime, soda, potash, often inhibit rusting. A solution of potassium dichromate is especially good.—Raymond Hertwig.

The Round Table.

Keeping Meat.—In reply to the inquiry as to how to keep fresh meat during the summer, I would like to tell how many western people manage. We cut the fresh pork in slices, fry it in deep fat until thoroughly heated through. It should be cooked about half done, not less. Put a layer of fat in the bottom of a good clean sweet lard can. Put the slices in, then another layer of fat and meat, etc, until the can is full or your meat used up. Cover the top with fat and put on cover. Keep in a cool cellar. I have also tried quart pails with covers. Beef and chicken may also be kept in this same way. The thing to avoid is air spaces. A little bubble of air will start decomposition and spoil the whole.—M. E. A.

Treatment of Burns.

A physician writes: Free use of soft soap upon a fresh burn will remove the fire from the flesh in less time than it takes to write these words. If the burn be severe, after relief from the pain use linseed oil, and then sift upon it wheat flour. When this is dried hard, repeat the oil and flour until a complete covering is obtained. Let this dry until it falls off, and a new skin will be formed without a scar. This treatment leaves nothing more to be desired.

In most all processes of bleaching, an acid is formed which will weaken the fibers of the cloth, and, if very strong will destroy them unless quickly neutralized by an alkali. Ammonia or washing soda solution are the best to use for this purpose.

A Coal and Wood Range with a HIGH OVEN

Patented in Canada

Not a Gas Range

MOTHER too often sits down to the meal she has prepared too tired to enjoy it. Happy—but oh so weary!

Stooping constantly to attend the oven—to watch the roast the pies, the cakes! It's a back-breaking task. Yet baking need not be wearisome. This new coal and wood range makes it what it always should have been, the most interesting part of housework. It has so many ways of lightening housework that we have changed its name from the High-Oven Peninsular to the

LIGHTER DAY HIGH OVEN RANGE

6 pot holes—4 outside and 2 inside—cooking odors cannot escape

What a difference to have Lighter Day in the Kitchen

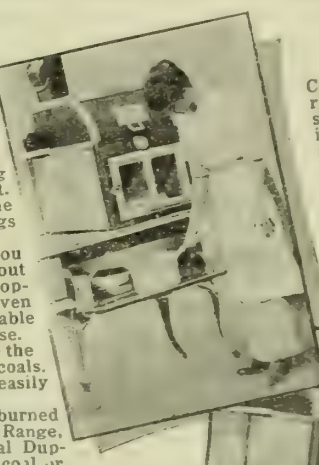
Never to stoop to do your baking! No lifting up and down of hot, heavy pans! The High Oven makes all the difference between "weariness" and "pleasure" in baking. Everything that used to tire a woman's back is changed in the wonderful High Oven Range

The thermometer and cooking chart meet you at standing height. The warming closet is just above the oven—and it is heated so that things are kept piping hot.

The oven door is clear glass—You can watch your baking, without opening the door—and without stooping. There are pot-holes in the oven and in the warming closet. Vegetable odors need never get into the house.

You have a toasting lever to raise the whole section of the top over the coals. You have grates that shake down easily and without sticking.

Extra long pieces of wood can be burned in the LIGHTER-DAY High Oven Range. It has a 26-inch fire-box. Or special Duplex reversible grate, for either coal or wood can be supplied.

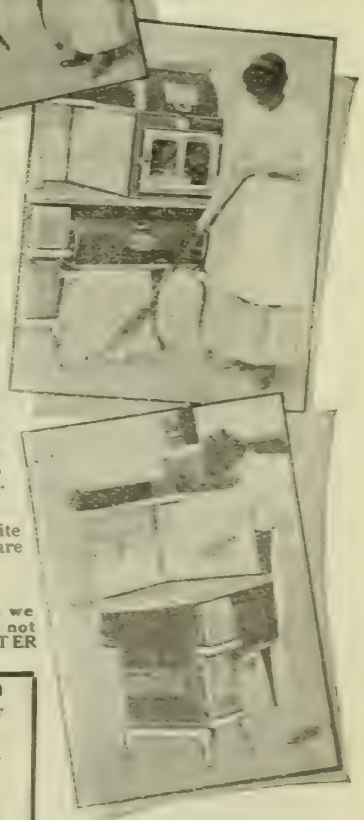


Handy Storage for Pans

Cooking utensils are kept right at hand and out of sight. This storage closet is heated and can be used as a big warming closet.

Clear Sweeping Space

It's so easy to clean the floor under the Lighter Day, as under the table.



You could hardly imagine an oven that heats so quickly. The reason is simple—there is no heat wasted waiting for the fire to "burn up." The oven starts to heat as soon as the kindling is lit.

So the lighter day makes lighter coal bills.

THE PHOTOGRAPHER TELLS THE STORY Wouldn't you like to see a Lighter Day Range? Every day more stores are ordering Lighter Day Ranges but if you want to see the range right away, if you want to see how your own work can be lightened—we will send you a wonderful little book. The photographer made this book. He took pictures of a woman using the Lighter Day Range, and really it's almost as good as seeing the range yourself. **Let us send you this little book and if you have a friend who thinks as you do in planning for "A Lighter Day in the Kitchen," write her name on the coupon, too. Just mail the coupon to-day, so you won't forget.**

Porcelain Enamel or Tile

You may choose a finish of either beautiful tile or white porcelain enamel. Both styles are handsome and are so easy to keep clean, and, of course, cannot rust.

READ THIS GUARANTEE

In the fifty-eight years we have been making ranges we have never expected a woman to keep one that did not give perfect satisfaction. We guarantee THE LIGHTER DAY High-Oven Range unconditionally.

CLARE BROS. & CO., LTD., - PRESTON

Send me your photo-story of the Lighter Day Range, FREE.

.....

.....

Also send a copy to .....

M.F., No. 8.

CLARE BROS. & CO., LIMITED

Makers of Hecla Furnaces, - - - PRESTON, Ontario

Behind the Times.

(Continued from Page 44)

in question was the champion Holstein cow of the fair but the owner was more or less of a wag and to have a joke with the inquirer, who, by the way, we have since learned, was a graduate of the New Brunswick Normal School, volunteered the information that the cow was a White Leghorn. The prospective school teacher went away perfectly satisfied that he had learned to recognize the White Leghorn breed. This is only one of the many instances of the woeful ignorance that exists regarding the common things that surround us.

So far as the Maritime Farmer is concerned, we have no hesitation in saying that it would be a regretable fact if Nature Study which now occupies such an important part in the curriculum of the schools of the province were interfered with by teachers who are not broad minded enough to see its value or who have not prepared themselves to teach it.

In regard to behind-the-times teachers and educational leaders who side with their views we would say that the Department of Education can do better without them and their services than the boys and girls of New Brunswick can do without the opportunity to acquire a knowledge of Nature through its study in our schools.

What says Mr. E. S. Carter, the chief Superintendent of Education of the Province about the matter? At a meeting of the Kings-Queens Teachers' Institute held in Hampton last week, the Chief Superintendent said in part:

"More than 80 per cent. of the people of the Maritime Provinces live outside the cities and towns, and the great majority of these are engaged in agriculture. It is most necessary therefore to give such bent to our educational facilities that the needs of our most important industry and interests should be catered to and supplied. To this end the Agricultural Department of this Province is bending its energies and the Education Department is heartily co-operating.

"The Course of Instruction in Elementary Agriculture, which has recently been criticized in resolutions published in the press, has had the approval of the text book committee, all teachers have been invited to criticize it in their annual reports to the Inspectors, and the Director has offered to visit any locality to hear and take into account any suggestions for its improvement or amendment.

"Up to this time no formal complaint as to the Course has been made to the Education Department.

"It is not claimed that this or any Course is perfect, new machinery is likely to creak until it becomes adjusted. If it is not wholly adapted to the work of city grades, and this can be demonstrated,—it is not like the laws of the Medes and Persians, it can be changed, but constructive criticism rather than destructive, will be necessary to bring this about, and we wish to meet suggestions fairly and frankly made. The educational ends to be sought from the Course are quite as important to city children as to those living in the country, the facilities for acquiring may not be so good in the cities.

"The subject is too important a one to be lightly turned aside by those who will not take pains to acquire the knowledge requisite to teach it, or those who are averse to more work, or reactionaries.

"Agriculture is a subject which will continue to occupy more and more of our attention in the schools of this Province, and it behooves all engaged in the work of education to prepare for the demands which will surely be made upon them."

Mr. Carter has the support of the best thinking class of people of the province in his stand on this matter. He speaks in no uncertain sound. The last paargraph of his address sounds of the note "Prepare or Beware."

Everybody wants to bake—when the

REGAL FLOUR

barrel is opened.

The Yarmouth County Exhibition.

(Continued from page 45.)

plums, pears and peaches. J. M. Porter and J. L. Gavel had collections of 50 varieties. There were 6 collections of 20 varieties, prizes going to Alf. Hamilton and J. M. Porter; 4 collections of 10 each, prize winners, J. M. Porter, Ira L. Gavel and many collections of smaller or special groups, besides the individual exhibits, and apples in boxes and barrels. Other prize winners being Moses Crosby, Robert Gavel, N. P. Crosby, Wm. Porter, Jesse Moses, Adolph Wood, Chas. E. Pitman and Ralph Porter.

Some fine exhibits of grapes grown under glass were shown by Dr. J. M. Lovitt, Asa K. Crosby and Mrs. Don Can, as well as a plate of peaches, under glass, by W. R. Campbell.

Peck exhibits of cranberries won prizes as follows: Large oval, Mrs. W. Hammond; upland, Geo. W. Pitman; small red, Jenette Pitman; spiced grey, Mrs. W. D. Porter.

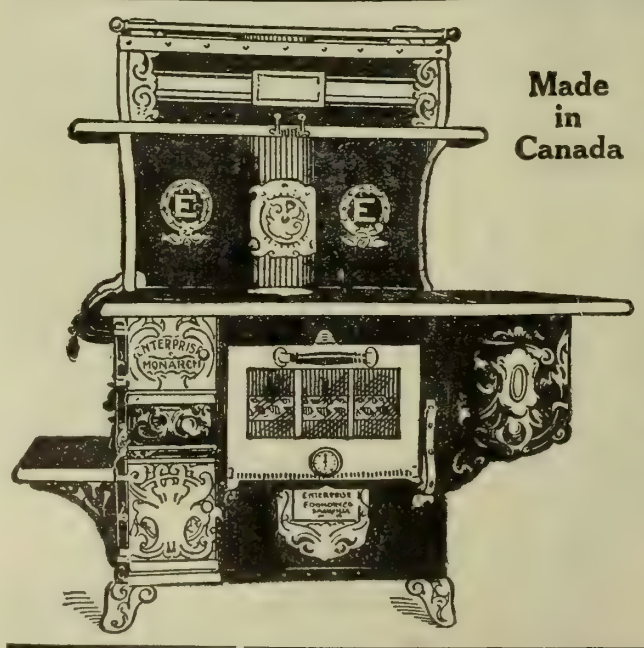
The exhibits of bread, preserves, cakes, and pickles looked wholesome, attractive and toothsome. The exhibit was large and competition keen. The male sex, especially the small boy looked at it wistfully and devouringly. The prizes should be larger if merit and importance count. Prize winners include Miss Maude Raymond, Clifford R. Kelley, Mrs. G. I. Allen, Mrs. Adolph Corning, Mrs. Moses Crosby, Mrs. Henry Burrill, Mrs. W. O. Porter, Miss Vera Porter, Mrs. Edw. McKay, Miss Jenette Porter, Miss Laura Kinney and many others.

The exhibit of Domestic Manufactures including rugs, carpets, mats, quilts, blankets and articles of wearing apparel had every appearance of being warm, substantial, comfortable and durable. It was much larger than for many years. Prizes went to, amongst many others, Misses Ethel Handy, Lottie Levy, Laura Kinney, Fannie Burrill, and Mrs. Arthur Winter, Andrew B. Crosby, Wm. O. Porter, Jas. Pothier, and others. Mrs. W. N. Allen had a very fine show case of home made candies that deservedly won a first.

Besides making arrangements for the exhibits, the providing of entertainment forms a very important part of every exhibition. The management looked after this, indoors, by two sets of performers, a group of three "tumblers," and a pair of "ladder performers." Both were clever thrillers, and were received by the large crowds with enthusiastic applause. They also listened with appreciation and keen interest to the recruiting meeting with Lieut.-Col. Seeley and Lieut. Morton as speakers. Three recruits were added to the already large number of nearly 400 sent from Yarmouth county.

The chief outside attraction was the parade of prize winning stock, a parade so large as to completely fill the full circle of the stock yard. This event was second in interest only, to the testing of the horses and putting them through their paces for the benefit of the pudges. Then thehre was the hauling contest for oxen, in which first prize went to Mr. Edw. Hatfield, whose oxen hauled 1.44 lbs. per pound of ox; 2nd prize to Mr. Geo. Handy, at the rate of 1.40 lbs. per pound, and 3rd to Mr. Joe Ellis with a pull of 1.36 lbs. per pound. Pretty close, with some deft exhibition of teaming.

These attractions, with the merry-go-round, and the usual side shows, made a very interesting and profitable exhibiion. Financially, too, the exhibition was a success. And the management are coming in for no end of congratulations on the splendid results of the 1915 agricultural exhibition.



Made in Canada

ENTERPRISE Steel

Monarch Range

MADE of finest steel plate, asbestos-lined, with every practical time-and-labour-saving improvement yet invented, the Monarch is truly a "king among ranges". Strong, handsome, durable, economical of fuel, it will give perfect satisfaction for many years of daily use. For coal or wood.

Write for booklet— free for the asking.

Enterprise
FOUNDRY CO. SACKVILLE, N.B.

A COLD

Settled On Her Lungs

Causing Great Pain.

THE CURE WAS

DR. WOOD'S Norway Pine Syrup.

Miss D. M. Pickering, St. Catharines, Ont., writes: "Having derived great benefit from Dr. Wood's Norway Pine Syrup, I thought I would write and tell you of my experience. When I first came out from England I contracted a severe cold, owing to the change of climate. It settled on my lungs, and caused me a great deal of pain. I tried every remedy I could think of, but got no relief. My father, who had heard a great deal about the good qualities of Dr. Wood's Norway Pine Syrup, advised me to try it. I did so, and I am pleased to say, found immediate relief. I only took one bottle and it cured me completely. My mother had a severe cold also, and Dr. Wood's Norway Pine Syrup cured her, so we never fail to keep a bottle of it in the house."

See that none of those so-called "pine syrups" are handed out to you when you go to your druggist or dealer and ask for "Dr. Wood's." It is put up in a yellow wrapper; three pine trees the trade mark; price, 25c and 50c.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

Parasitic Diseases of Sheep.

(Continued from last issue.)

Parasitic Gastritis.

This was inflammation of the fourth stomach due to the presence of parasites, and was first known in this country by the name of the Lincolnshire disease. He had never know sheep or lambs to recover with any sort of treatment when once the serious symptoms had developed and all that they could hope to do was to treat the whole flock on finding evidence of the disease, whether the animal appeared ill or not. The worms were so small that they were practically invisible to the naked eye when mixed in food. eH suggested that if deaths occurred among their lambs after weaning it was desirable to ascertain the nature of the illness that caused the mortality, an dthey should always look to the fourth stomach. The way of examination could be made very simple. Take the fourth stomach into some covered shed, obtain a glass jar, and a tumbler. Slit up one side of the stomach and pour its contents into the jar; then fill the tumbler with clear water, and using a penholder, stir up the contents of the stomach. If it is very stiff, add some water, but generally it is unusually liquid. With the wooden part of the penholder sttir up the contents and then wash the penholder in the tumbler. Hold the tumbler up to the light, and if the lamb has been badly infested possibly as many as twenty or forty specimens may be seen in it, and a fairly good idea may be formed as to whether many or comparatively few parasites are present in the stomach. He remembered one case in which the larger worms were concerned, in which they were in such active movement, wriggling about in the liquid, that the worms themselves could not be seen, but the fluid contents were agitated as one saw the water of the sea agitated by mackerel drawn up in a net to the beach.

Treatment

A careful test had been made of many of the drugs put forward for treatmentt of parasitic gastritis—creosote, petrol and arsenical tablets—but ont one of these had proved thoroughly efficient. He had carried on experiments with the use of aniline dye and of pepperment, but had been unable to find any evidence that these penetrated into the fourth stomach, and the fact was that any drug that would reach the fourth stomach in condition to prove effective would have to be given in doses sufficient to poison the animal. For that reason all efforts to find a specific for the terrible scourge had failed. He had had as much success with the old-fashioned remedy of turpentine and oil as with any other. Apparently turpentine and oil produced no effect in his experiments, but in actual practice it was found successful in one outbreak; then it was tried in another and proved absolutely useless. It was important to recognize the disease early, and the only thing was to try a varietyof remedies. Give turpentine and oil; give a mixture of drugs, such as extract of male fern, 7 oz., oil of turpentine 7 oz., tincture of asafoetida 7 oz., cresote 5 dhrachms, and linseed oil 1 quart; mix all together and give a lamb one tablespoonful and sheep two; the dose could be repeated and given for some time every three days. That treatment had on some occasions be very successful.

A discusion followed. The chairman said one of the principal remedies was to feed the lambs as soon as they could possibly get to the trough to dry food, and give sulphate of iron and plenty of rock salt; that would go a long way to ward off this terrible danger. His own experience was that cases were as frequent on upland pastures as on lowland.

In reply to questions Mr. Higgs, the owner of the sheep referred to by the lecturer, said the sheep had been bred from again, and no further trouble had occurred in any shape or form.

Mr. Sherwood said he tried to keep the animals off old, stale pasture as much as possible as a preventive, and always gave the sheep a mixture into which sulphate of iron and common salt entered; this was mixed with artificial foods. With good food it enabled the lamb very quickly to throw off the attacks of both tapeworm and stomach worm.

Constipation--
the bane of old age
is not to be cured by harsh purgatives; they rather aggravate the trouble. For a gentle, but sure laxative, use Chamberlain's Stomach and Liver Tablets. They stir up the liver, tone the nerves and freshen the stomach and bowels just like an internal bath.

CHAMBERLAIN'S TABLETS

Woman's best friend.
From girlhood to old age, these little red health restorers are an unfailing guide to an active liver and a clean, healthy, normal stomach. Take a Chamberlain's Stomach Tablet at night and the sour stomach and fermentation, and the headache, have all gone by morning.
All druggists, 25c., or by mail from
Chamberlain Medicine Company, Toronto 12

THIN & NERVOUS BABIES

Suffering Little Ones Cured by Dr. Cassell's Tablets.

FIVE MONTHS-OLD INFANT WHO WEIGHED ONLY 7 LBS.

SO THIN HIS MOTHER SHUDDERED TO UNDRESS HIM

NEVER BELIEVED HE COULD LIVE

BUT NOW BRIGHT AND WELL CURED ABSOLUTELY BY

DR. CASSELL'S TABLETS

Here is matter to interest every mother throughout this great Dominion; the frank, grateful testimony of other mothers who have proved Dr. Cassell's Tablets a real help in winning back health for their little ones. And the cases are not in any way exceptional; they show just such splendid resutls as any mother may expect from systematic use of this valuable medicine. Dr. Cassell's Tablets have proved their worth in Great Britain, where their sale is the largest of its class, and in the Britains beyond the seas their reputation is advancing rapidly.

Now read what a happy mother has to say of Dr. Cassell's Tablets. She is Mrs. Fern, of 82, Desborough-road, Eastleigh, Hants, England, and her story is as given to an interviewer. She said:—

"When I think of all that Dr. Cassell's Tablets have done for my little baby I bless the day I heard of them. I am convinced they saved my child's life

"My little Harold was a fine baby when born but soon he began to fail, and when a few weeks old I had to have advice. For four months baby was under treatment, but no good came of it; the child only got worse. It was pitiful to see him, he was so appallingly thin His little bones stood out all over his body. We could easily count the joints in his back-bone, his shoulders were hollowed in like pits,

Baby Fern.

and his cheek-bones stood up like ridges. It made me shudder to undress him, he was such a frail little skeleton of a baby. He could not keep anything on his stomach, not even the breast—and I'm sure I am healthy enough We had ever so much medicine, but baby seemed doomed. Once I really thought he was gone, he lay so still and his jaw had dropped. The anxiety was terrible Often and often I have sat up with my poor little Harold waiting for the end But thanks to Dr. Cassell's Tabelts it was not to be

"Harold was 5 months old and weighed only 7 pounds, when we first got Dr. Cassell's Tablets. Actually in two days there was an improvement, and now, two months later, he weighs over 12 lbs,. and is ever so bright and well."

LOST USE OF HER LIMBS

NOW STRONG AND WELL

Every day proof is added to proof that Dr. Cassell's Tablets possess striking power to renew healthy nerve action and thus to restore activity where even the power to move has been lost. Particularly is this so in the case of children; and numberless cures have been effected, and are constantly being effected, both here in Canada as well as other parts of the Empire. Mrs. Parsley of Chapel Hill,

Braintree, Essex, England, said; "Baby was only about a year old when she began to lose the use of her limbs,, and soon became quite helpless. Of course, we were very much alarmed, and when we were told the child would not be able to walk for years, we almost lost hope. We had the best treatment we could find for her, but nothing seemed to help the child at all. Indeed, instead of getting better she just wasted away till she was a mere frame. She hardly ate anything, and was so weak and ill that it could not seem possible she could recover.

"Then we gave her Dr. Cassell's Tablets. The first effect of the Tablets was that the baby got sound, natural sleep. Then she improved in general health, and gradually power returned to her, until baby got stronger and stronger, more plump, till now she is quite cured."

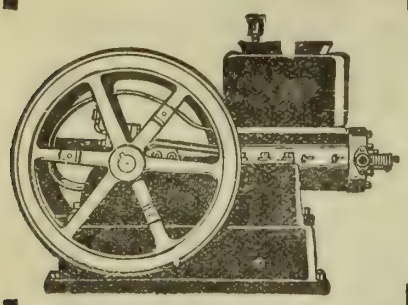
BRITIAN'S GREATEST REMEDY

POPULARITY NOW WORLD-WIDE.

It is cures like the above, the genuineness of which has been thoroughly investigated, that have made Dr. Cassell's Tablets one of the most talked of remedies of modern times. Their entire safety and purity, their suitability for young and old alike, and their peculiar efficacy have ensured a high reputation throughout the world. Test their reliability as a remedy if you suffer from Nervovus Breakdown, Nerve Failure, Infantile Weakness, Neurasthenia, Sleeplessness, Anaemia, Kidney Trouble, Dyspepsia, Stomach Disorders, Wasting, Palpitation, and they are specially valuable for nursing mothers and girls approaching womanhood. All druggists and storekeepers throughout the Dominion sell Dr.. Cassell's Tablets at 50 cents. People in outlying districts should keep Dr. Cassell's Tablets by them in case of emergency. A Free Sample will be sent on receipt of 5 cents for mailing and packing, by the Sole Agents for Canada, H. F, Ritchie and Co., Ltd., 10, McCaul-street, Toronto Ont.

Gilson Engine

"Goes Like Sixty"



ANYBODY can operate the simple "GOES LIKE SIXTY" Engine. Ready for work the moment you get it. Built strong and solid to last a lifetime. Will give long, unfailing satisfaction. Gas, gasoline or kerosene can be used for fuel.

GILSON QUALITY gives full value for your money—dependable service, great durability, highest economy and perfect satisfaction; freedom from trouble, delays and expense

EVERY ENGINE ABSOLUTELY GUARANTEED. You can try this engine on your own farm before settling for it. You take no chances.

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Apart from the fact that our

"Easy-Pull" Spreader

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you must consider the working points. So drop us a card and learn why it is so popular.

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Hackney stallion—C. L. Shaw, 2.

Percherons

Stallion, 4 years old and over.—Edwin Reid, 1; Haddon Lunn, 2.

Stallion, 1 year old—H. M. Estes, 1.

Mare, 4 years old and over.—H. B. Webb, 1; H. N. Estey, 2.

Mare with foal at side—John Wakim 1.

Mare, 2 years old—Samuel Gallagher, 1; John Wakim, 2.

Mare, 1 year old—W. B. Webb, 1; John Wakim, 2.

Mare, foal—John Wakim, 1.

Clydesdales

Stallion, 4 years old and over.—Harry Shaw, 1; H. E. Trafford, 2.

Stallion, 3 years old—D. W. Pickett, 1.

Stallion, 2 years old—D. W. Pickett, 1.

Mare, 4 yrs. nad over—Clover Nook Stock Farm, 1; H. E. Trafford, 2.

Mare, 2 years old—George Lemoreux, 1.

Mare, 1 year old—Clover Nook Stock Farm 1.

Mare, foal—George Lamoreaux, 1.

Draft

Pair draft horses—H. M. Weade, 1; Wm. McDonald, 2; Alex. Ritchie, 3.

Mare or gelding, 2 years— Samuel Gallagher, 1.

Mare or gelding, 1 year—Alex. Ritchie, 1.

General Purpose

Pair horses—Barry Wakim, 1; John Gillis, 2; George Long, 3.

Mare or gelding, 4 years.—John Owens, 1; H. E. Trafford, 2; Lee Nicholson, 3.

Pair horses, 2 years—G. F. Briggs, 1.

Mare or gelding, 2 years—Frank Sloat, 1; Basil Trafford, 2; Robert McKay, 3.

Mare or gelding, 1 year—S. W. Burtt, 1.

Mare or gelding, 3 years.—Samuel Gallagher, 1.

Brood mare with foal at side.—Lee Nicholson, 1; G. F. Briggs, 2.

Foal,—Lee Nicholson, 1; G. F. Briggs, 2.

Driving

Pair driving horses—Dr. F. M. Brown, 1 and 2.

Mare or gelding, 4 years—Bliss Cronkite, 1; G. F. Briggs, 2; Alex. Ritchie, 3.

Mare or gelding, 3 years—Albert Simonson, 1; John Wakim, 2.

Mare or gelding, 1 year old—Dr. F. M. Brown, 1; Isaac Gallagher, 2.

Hauling Competition

Barry Wakim and H. M. Weade divided 1st and 2nd prizes between them.

CATTLE

Shorthorns

Bull, 2 year old—John Owens, 1; C. A. Simonds.

Bull, 1 year old—George Long, 1.

Bull calf—C. A. Simonds, 1.

Cow, 4 years old and over.—George Long, 1 and 2.

Cow, three years old—John Owens, 1 and 2.

Heifer, 2 years old—Percy Simonds, 1; Wm. McDonald, 2.

Heifer, 1 year old—George Long, 1; John Owens, 2.

Heifer calf—John Owens, 1; Geo. Long, 2.

Holsteins

Bull, 2 years old—Isaac Gallagher, 1.

Bull, 1 year old—Fred Harris, 1; Geo. Lamoreaux, 2.

Bull calf—Clover Nook Stock Farm, 1 and 2.

Cow, 4 years old and over—Clover-Nook Stock Farm, 1.

Cow, 3 years old and over—Isaac Gallagher, 1; George Lamoreaux, 2.

Cow, 2 years old—Clover Nook Stock Farm, 1.

Heifer, 2 years old—Isaac Gallagher, 1 and 2.

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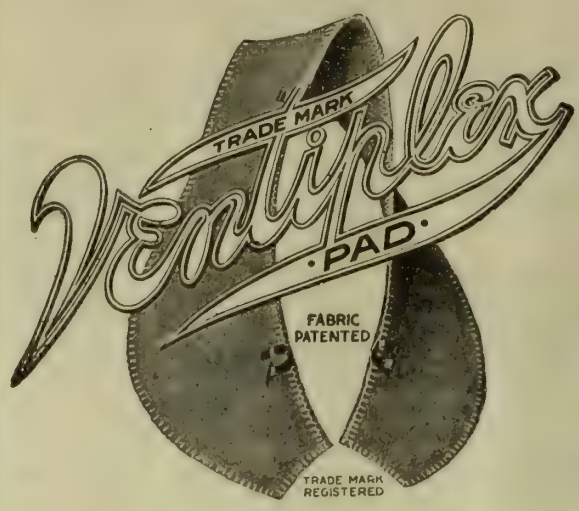

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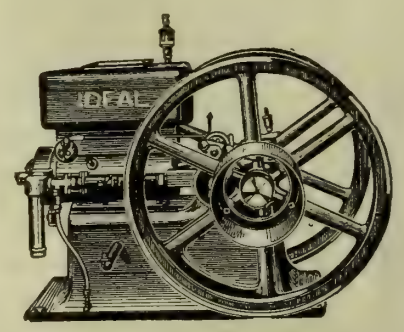

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Aryshires

Bull, 4 yrs. and over—Clover Nook Stock Farm, 1.
Bull, 1 year old—A. A. Margison, 1; H. E. Trafford, 2; A. A. H. Margison, 3.
Bull calf—Clover Nook Stock Farm, 1 and 2.
Cow, 4 years old and over—Clovernook Stock Farm, 1; A. A. H. Margison, 2 and 3.
Cow, 3 years old—G. F. Briggs, 1; A. A. H. Margison, 2; Colvernook Stock Farm, 3.
Cow, 2 years old—A. H. Margison, 1.
Heifer, 2 years old—Clovernook Stock Farm, 1.
Heifer, 1 year old—John Reid, 1; Clovernook Stock Farm, 2 and 3.
Heifer calf—A. A. H. Margison, 1 and 3; Clovernook Stock Farm, 2.

Jerseys

Bull, 3 years old—Robert McKay, 1.
Bull, 1 year old—A. R. Hawkins, 1.
Cow, 3 years old—Hamilton Reid, 1; A. R. Hawkins, 2; Robert McKay, 3.
Heifer 1 year old—Hamilton Reid, 1; Robert McKay, 2.
Heifer Calf—Hamilton Reid, 1; Robert McKay, 2; A. R. Hawkins, 3.

Grades and Crosses

Cow, any age—S. W. Burtt, 1; Horace Estabrook, 2.
Heifer, 2 year old—Percy Simonds, 1.
Heifer calf—A. R. Hawkins, 1.
Shorthorn cow, any age—Wm. McDonald, 1; George Long, 2.
Shorthorn Heifer, 2 years—John Owens, 1.
Heifer calf—C. A. Simonds, 1.
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Ayrshire heifer calf—S. W. Burtt, 1; Z. Sloat & Son, 2.
Jersey cow, any age—Don Scholey, 1; F. D. Tweedie, 2; A. J. Lee, 3.
Jersey cow, 2 years old—S. W. Burtt, 1; Lee Nicholson, 2; Horace Estabrook, 3.
Jersey Heifer, 2 years old—Lee Nicholson, 1.
Jersey, heifer, 1 year old—Don Scholey, 1; S. W. Burtt, 2; Everett Thomas, 3.
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Pr. steer calves—Isaac Gallagher, 1.
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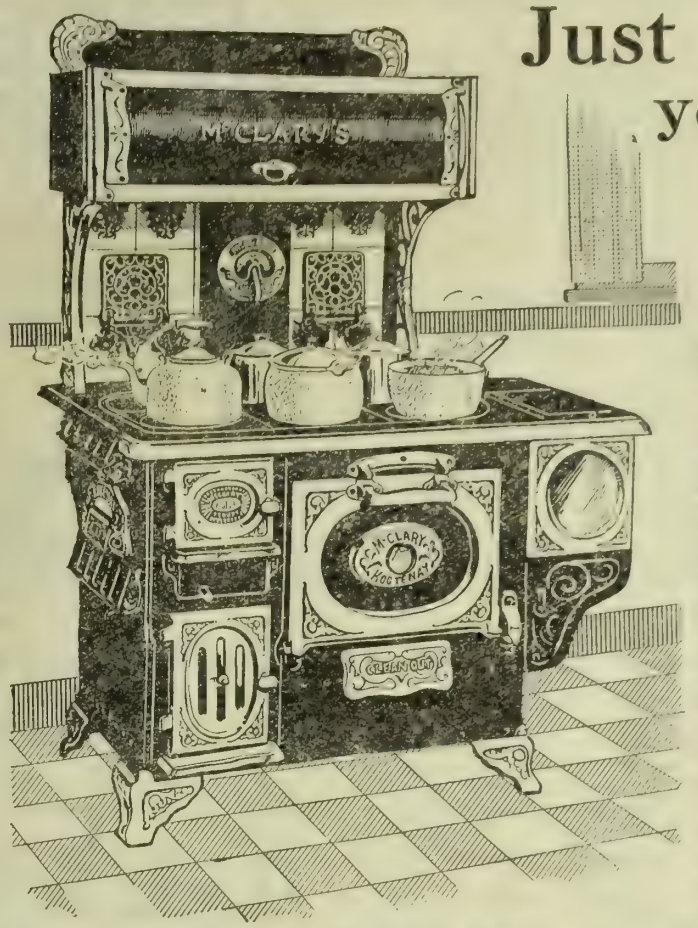
Ram, 2 year old and over—Clovernook Stock Farm, 1.
Ram, 1 year old—Clovernook Stock Farm, 1.
Ram lamb—Clovernook Stock Farm, 1.
Pair ewes, any age—Clovernook Stock Farm, 1.
Pair ewes, 1 year—Cloveronok Stock Farm, 1.
Pen four ewes—Clovernook Stock Farm, 1.
Pen 4 ewe lambs—Clovernook Stock Farm, 1.

Oxford

Ram, 2 years old and over—Clovernook Stock Farm, 1.
Ram lamb—Clovernook Stock Farm, 1.
Pair ewes, any age—Clovernook Stock Farm, 1.
Pair ewe lambs—Clovernook Stock Farm, 1.
Ram Lincoln, 2 years—Harvey Weade, 1.
Ram, Cotswold, 2 years—\Wm. Page, 1; Wm. McDonald, 2.



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Most housewives have a very clear idea of what their ideal range would be—they are familiar with different ranges and know the features they like best and the features they do not approve of.
We believe we know the features which would receive their approval, and the features which would not.
In the "Kootenay" range we have combined all the good features and have left out other features which the majority of women would leave out.
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The present model is the same sterling cooker and baker of former years, but made handsomer with more bright nickel trimming. *Durable* because the body is "ARMCO" rust-resisting iron, and firebox linings are McClary Semi-Steel; *economical* because its heavy Duplex grates give a clear fire from end to end and its firebox is built to save fuel; *a wonderful baker* because heat reaches every part of the oven, which is of nickelled steel, drawing and retaining heat better than any other material.

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Pen 4 ewes (grades—Geo. Long, 1; C. Nye, 2; H. E. Trafford, 3.
Pair ewes (grades)—Wm. McDonald, 1; Geo. Long, 2.
Pair of ewes 1 year (grades)—Wm. McDonald, 1; Geo. Long, 2; H. E. Trafford, 3.
Pair ewe lambs—Geo. Long, 1; C. Page, 2.

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Tamworths

Boar, any age—Clovernook Stock Farm, 1.
Breeding Sow with pigs, 2 years—Clovernook Stock Farm, 1.
Sow, 1 year—Clovernook Stock Farm, 1.
Sow, pig—Clovernook Stock Farm, 1.
Boar, 1 year old—Clovernook Stock Farm, 1.
Boar pig—Cloverdale Stock Farm, 1.

White Chesters

Boar, any age—Isaac Gallagher, 1.
Breeding sow, 2 years, with pigs—Isaac Gallagher, 1; A. A. H. Margison, 2 and 3.
Breeding sow, 1 year, with pigs—Everett Thomas, 1; Robert McKay, 2.
Breeding sow, 2 years old—A. A. H. Margison, 1; F. E. Trafford, 2.
Sow pig—A. A. H. Margison, 1, 2 and 3.
Boar, 1 year old—A. A. H. Margison, 1.

Yorkshires

Boar, any age—Fiske Bros., 1.
Breeding sow, any age—Fiske Bros., 1.
Boar pig—Fiske Bros., 1.

Grades and Cross

Sow, 1 year old with pigs—Robert McKay, 3.
Breeding sow, 1 year old—George Lamoreaux, 1; Everett Thomas, 2.
Breeding sow, 2 years and over—1, Lee Nicholson, 1; Horace Estabrook, 2.

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Biliousness

Indigestion, biliousness, headaches, flatulence, pains after eating, constipation, are all common symptoms of stomach and liver troubles. And the more you neglect them the more you suffer. Take Mother Seigel's Syrup if your stomach, liver, or bowels are slightly deranged or

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Apple Barrels and Standard Apple Boxes, Box Shooks, to pack the apples in. Eight Quart Baskets for Tomatoes and Pears; Six Quart Baskets, for Plums; also Crates for same; Potato Barrels and Barrel Stock.
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Barred Plymouth Rock, hen—Dr. F. M. Brown, 1 and 2.
Barred Plymouth Rock, cockerel—S. W. Burtt, 1; A. A. H. Margison, 2; Dr. F. M. Brown, 3.
Barred Plymouth Rock pullet—S. W. Burtt, 1; A. A. H. Margison, 2.
White Plymouth Rock, hen—Isaac Gallagher, 1.
White Plymouth Rock, pullet—Isaac Gallagher, 1.
White Leghorn, cock — Harvey Weade, 1.
White Leghorn, hen — Harvey Weade, 1.
White Leghorn, cockerel—Dr. F. M. Brown, 1.
White Leghorn, pullet—Dr. F. M. Brown, 1 and 2.
Brown Leghorn, cock—Clovernook Stock Farm, 1; A. J. Lee, 2.
Brown Leghorn, hen—D. F. M. Brown, 1 and 3; Clovernook Stock Farm, 2.
Brown Leghorn, cockerel—A. J. Lee, 1; Dr. F. M. Brown, 2.
Brown Leghorn pullet—Dr. F. M. Brown, 1 and 2.
White Wyandotte, cock—Isaac Gallagher, 1 and 2; Dr. F. M. Brown, 3.
White Wyandotte, hen—Isaac Gallagher, 1 and 3; Harvey Weade, 2.
White Wyandotte, cockerel—Isaac Gallagher, 1 and 3; Wm. McDonald, 2.
White Wyandottte pullet—Isaac Gallagher, 1 and 3; Wm. McDonald, 3.
Partridge Wyandotte, cock—A. J. Lee, 1 and 2.
Partridge Wyandotte, hen—A. J. Lee, 1 and 2.
Partridge, cockerel—A. J. Lee, 1 and 2.
Partridge Wyandotte, pullet—A. J. Lee, 1 and 2.
Buff Orpington, cock—Dr. F. M. Brown, 1.
Buff Orpington, hen—W. E. Trafford, 1.
Buff Orpington, cockerel—Dr. F. M. Brown, 1 and 2.
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Rhode Island Red, hen—A. J. Lee, 1; A. A. H. Margison, 2.
Rhode Island Red, cockerel—A. J. Lee, 1 and 2; A. A. H. Margison, 3.
Rhode Island Red pullet— Dr. F. M. Brown, 1 and 2; A. J. Lee, 3.
Golden Wyandotte, hen—Dr. F. M. Brown, 1 and 2.
Silver Wyandotte, cock—Dr. F. M. Brown, 1.
Silver Wyandotte, hen—Dr. F. M. Brown, 1 and 2.
Golden Campine, cockerel—Dr. F. M. Brown, 1 and 2.
Golden Campine, pullet—Dr. F. M. Brown, 1 and 2.
Silver Campine, cockerel—Dr. F. M. Brown, 1 and 2.
Silver Campine, pullet—Dr. F. M. Brown, 1 and 2.
Anconas, cockerel—Dr. F. M. Brown, 1 and 2.
Anconas, pullet—Dr. F. M. Brown, 1 and 2.
Sicilian Buttercups, cockerel—Dr. F. M. Brown, 1 and 2.
Sicilian Buttercups, pullet—Dr. F. M. Brown, 1 and 2.
White Orpington, cock—Dr. F. M.
Light Brahma hen—Dr. F. M. Brown, 1 and 2.
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Pair geese (A.O.V.)—Cloverdale Stock Farm, 1.
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Breeding pen old White Wyandottes, —Wm. McDonald, 3.
Breeding pen young White Wyandottes—Isaac Gallagher, 1.

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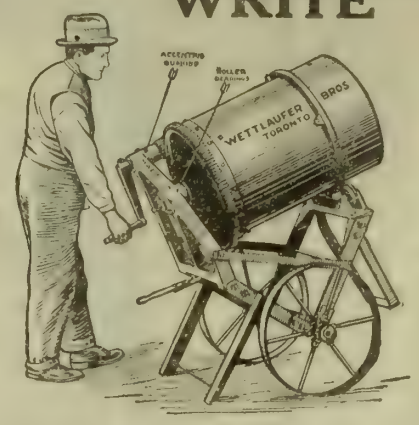

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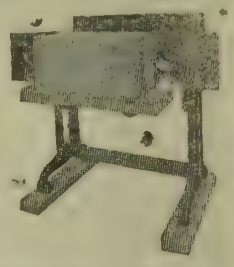

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Brown, 1.
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VEGETABLES

Hebron potatoes—A. J. Lee, 1; A. A. H. Margison, 2.
Cobbler potatoes—C. A. Simonds, 1; A. A. H Margison, 2; S. W. Burtt, 3.
Bliss potatoes—Harvey Weade, 1.
Norcross potatoes—A. A. H. Margison, 1.
Gold Coin potatoes—G. F. Briggs, 1; Samuel Cogswell, 2.
Cummings Pride potatoes—A. A. H. Margison, 1; C. A. Simonds, 2; W. Webb, 3.
Green Mountain potatoes—A. A. H. Margison, 1; C. A. Potatoes, 2; L. R. Margison, 3.
Beets, round—Geo. West, 1; S. W. Burtt, 2; Howard Reid, 3.
Beets, sugar—A. J. Lee, 1.
Parsnips—H. E. Trafford, 1; Wm. McDonald, 2; A A. H. Margison, 3.
Carrots, red—H. M. Estey, 1; Isaac Gallagher, 2; Horace Trafford, 3.
Carrots, white—Albert Simonson, 1.
Cabbage—Howard Reid, 1; S. W. Burtt, 2.
Tomatoes, green—S. W. Burtt, 1; Isaac Gallagher, 2; H. E. Trafford, 3.
Tomatoes, ripe—Albert Simonson, 1; A. A. H. Margison, 2; Horace Estabrook, 3.
Pumpkins, sugar—A. J. Lee, 1; S. W. Burtt, 2.
Squash, marrow—S. W. Burtt, 1.
Squash, Hubbard, S. W. Burtt, 1; Harvey Weade, 2; A. J. Lee.
Celery—A. A. H. Margison, 1.
Onions from sets—Horace Estabrook, 1; George Lamoreaux, 2; Albert Simonson, 3.
Onion, potatoes—Guy Carmichael, 1; Charles Page, 2; Romain McGrath, 3.
Cauliflowers—John Owens, 1; Harvey Weade, 2.
Turnips, white—A. R. Hawkins, 1.
Turnips, Kangaroo—John Owens, 1; W. Webb, 2; S. W. Burtt, 3.
Turnips, Purple top—A. A. H. Margison, 1; L. R. Margison, 2; Geo. West, 3.
Potatoes, large—A. A. H. Margison, 1; Lee Nicholson, 2.
Mangels—H. M. Estey, 1.
Cucumbers—Wm. R. Reid, 1; S. W. Burtt, 2; Sewell Trafford, 3.

GRAINS

Ligowo Oats—H. M. Estey, 1.
Russian Oats—Howard Reid, 1; H. E. Trafford, 2.
Swede oats—W. Webb, 1; A. A. H. Margison, 2; L. R. Margison, 3.
Banner oats—C. Page, 1.
American Beauty oats—Wm. McDonald 1.
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Rennie's Early Yielder oats—A. A. H. Margison, 1; L. R. Margison, 2.
Barley—Horace Estabrook, 1.
Barley, O. A. C. 21—W. Webb, 1.
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Peas,green marrowfat,—C. Page, 1.
Peas, golden vine—A. R. Hawkins, 1; C. Page, 2; H. M. Estey, 3.
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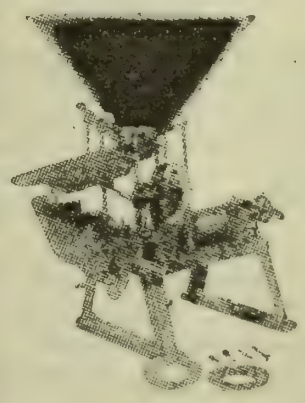

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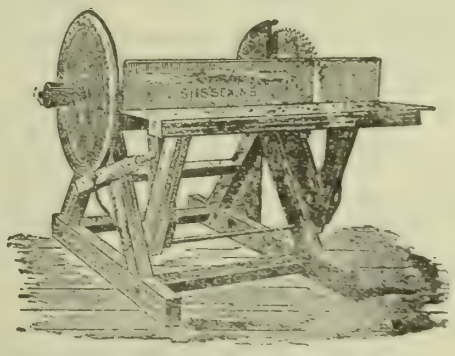

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For sale; One 5 year old Imp. Clydesdale mare in foal. Has had one colt. Weight 1500 pounds, Color, brown with white face. Clydesdale foal, female out of above mare sired by a horse weighing over a ton.

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We have a nice lot 2 weeks younger that we are offering at reasonable prices. Great laying strain.

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Leicester Sheep, Shearling Rams. Also Ewe and Ram Lambs; also Shorthorn Bull Calf, "milking type, three to 5 months old. Apply

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ROSE COMB RHODE ISLAND REDS

Here Eggs—$1.50. $2.50 and $5.00. Send for mating list. Have yearling cock for sale also two cockerels.

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Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

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Guernsey Cattle.

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Howard W. Corning, Cheggogin, Yarmouth Co., N. S.
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Holstein Cattle.

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F. W. C. Nase, Nerepis Station, Kings Co., N. B
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J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

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E. W. Heurtley, P. O. Sutherland's River, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C' A. Archibald, Truro, N. S.

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R. J. Messenger, Lawrencetown, N. S.
E. W. Heurtley, P. O. Sutherland's River, N. S.
Steward Bros., Murray River, R. R. No. 1, P. E. I.
J.W.Callbeck & Sons, Box 386, Summerside, P.E.I.
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R. J. Messenger, Lawrencetown, N. S.

Springbrook Ayrshires!

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Clover Nook Stock Farm

Our parent stock has been tested and found free of tuberculosis. We are also running a performance test. When you buy from us you know what you are getting.

Our lines are Ayrshires, Holsteins, Tamworth and Berkshire Pigs, Dorset and Oxford Sheep.

R. E. KIDNEY, Manager.
HARTLAND, N. B.

FOR SALE.

20 Rose and Single Comb R. I. Red Cockerels, 10 S. C. R. I. Red Hens, one year old.

Write for prices.

W. H. HENRY, - Shubenacadie, N. S.

MEADOWLANDS STOCK FARM.

We have two choice bred Shorthorn Bulls for sale six and seven months old

MORRIS SCOVIL & SONS,
Gagetown, - - N. B.

FOR SALE

2 Purebred Registered Guernsey BULLS

"Hector," calved May 10, 1914,
Price $100.00

"Arthur," calved, Apr. 17, 1915
Price $25.00

H. C. CORSON,
South Ingonish, C. B,

AYRSHIRES

Three Registered Heifers, calved last July, for sale.

Write for particulars.

Geo. E. Walker, Lr. Truro, N. S.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—Oxford Down Rams. All ages.—J. W. MacDONALD, Lovat, Pictou, N. S.

FOR SALE—Pure Bred Berkshires. A few sows fit to breed this winter. JAS. W. MACBAIN, Meadowville Sta., N. S.

FOR SALE.—One very fine registered Shropshire Ram, 4 years old. Also a few ram lambs. Apply to JOSEPH T. BARNES, Sussex, N. B.

WOULD YOU MARRY IF SUITED ?—Best Matrimonial paper published Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

FOR SALE.—White Chester, Yorkshire and Berkshire boars from five to eighteen months old. D. R. NICHOLSON, Coxheath, N. S.

WOULD YOU MARRY IF SUITED?—Best Matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

WANTED.—Married man to work on farm by the year, must have good recommendations. MORRIS SCOVIL & SONS, Gagetown, N. B.

FOR SALE.—Registered Ayrshire Bull, 2 years. Fine animal and well behaved. Change of blood needed. —J. M. HUDSON, Brookwood Farm, Juniper, N B.

WE WILL PAY YOU $120 for sixty days to distribute religious literature. Liberal pay for spare time. Experience unnecessary. Either sex. INTERNATIONAL BIBLE PRESS, Toronto.

DRESSED PORK 100 to 250 lbs. each well fatted. Butter prints and tubs. Eggs 3 to 10 case lots, prompt returns. JOHN HOPKINS, Mfgrs. of pork products, St. John, N. B.

YOUNG PIGS FOR SALE.—Purebred Berkshires, registered; Purebred Yorkshires, but not registered. Also Berkshires and Yorkshires crossed.—R. O'LEARY, Richibucto, N. B.

WANTED—LADIES TO DO PLAIN and light sewing at home, whole or spare time, good pay; work sent any distance; charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

SELLING OUT.—Regal White Wyandottes, classy birds, winners at fall shows, one pen. one cock, two hens, a grand cockerel and pullet, and a few Bred-to-lay Barred Rocks and show White Leghorns. — EVANGELINE POULTRY YARDS, Wolfville, N. S.

GUERNSEY BULLS FOR SALE.—One seventeen months; one eleven months. Also young calves, after our imported bull, out of Record of Performance cows.—D. G. MacKAY & Son, Scotsburn, N. S.

WANTED.—Persons to grow mushrooms for us during the fall and winter months, waste space in cellars, barns or outhouses can be made to yield from $20 to $30 per week. For full particulars and illustrated booklet apply MONTREAL SUPPLY COMPANY, Montreal Canada.

FOR SALE —One hundred acre farm in Cornwallis Valley. Good orchard and bulldings. Hay, tillage, pasture and woodland. Well situated near church, school and store. One and one-quarter miles from railway station For description and price apply to FRED E. WOOD, Lakeville, Kings Co., N. S.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls, 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

Third Annual Convention of the N. B. Women's Institutes.

(Continued from Page 43)

bert Trites of Petitcodiac, and "Civic Improvement Work," by Mrs. J. F. Roach, of Sussex.

For the many housekeepers assembled at the closing session of the Convention, Mr. McIntosh's illustrated address on "Household Pests" contained a number of valuable hints. This address will also be published in full and the reports, which will be ready for circulation January, 1916, will be available to all members of the Women's Institutes and others desiring to keep in touch with this organization.

Business combined with pleasure was the slogan of this year's Convention, when in addition to the above programme, the delegates were entertained to an automobile ride about the city and suburbs, Thursday afternoon, and a musical programme and reception the closing evening.

In order to encourage handicrafts in the homes of New Brunswick and to create a market for this work, the department had on exhibition at the Convention a beautiful collection in handicrafts, including mats, rugs, small covers, curtains, woven cloths and basketry. The exhibit was so arranged as to show off the designs to the best advantage, and the delegates and visitors were loud in their praises of the excellent display, the work of the women of the Province of Quebec.

A Farmer's Letter.

Teaches Necessity of Right Selection of Best Possible Potato Seed.

Farmers in the Maritime Provinces should put on their "thinking caps" after reading the following short letter from an Ontario agriculturist—a sort of "Macedonian cry" for help from the potato-growers of Eastern Canada The note runs:

"Dear Sir: The potato crops of the country are a failure. The member here advised me to write to you, saying that you might be able to tell me where good potatoes can be got and who has them for sale."

This is a typical letter chosen from several others which the Secrettary of Agriculture for Nova Scotia has received and is still receiving, from farmers and dealers in Ontario where the potato crop was a failure, chiefly due to a long season of wet weather that favored black rot. From the letter Maritime farmers should learn the importance of making the most careful selecttions of high class seed from this fall's yields. This should be do ie both for seed and for comemrcial purposes.

The first thing to do is to make a provisional selection of the best seed potatoes, which in 90 per cent of cases are to be found under the best plants or hills. This should be done shortly prior to the regular digging. But a second selection is absolutely imperative, after the first have been collected into a bin or piled on the barn floor. Here they should be picked over again, each potato rigidly inspected, and any that showed the slightest spot should be totally rejected from the new seed piles. In fact, the inspection and rejection cannot be too rigorous. For plant diseases are highly contagious. There a good rule is to select only sound and unblemished potatoes, rejecting even those which have slight bruises or cuts. This should be done over again at the time of spring planting.

Only in this way can farmers be sure that they have got potato seed that is prime in quality for yield, and likely to be immune from disease and the black rot parasite. Also it is the only way to get big prime yields, so as to have enough for seed, and for the home and export markets, and for a grade that will fetch the very highest prices in these markets. There is no fancy humbug about these recommenadtions. It is good business sense, and the time spent on the job means choice big crops and corresponding profits in real money.

FARM TO LET

Desirable Farm on the St. John River to let for such term of years as may be agreed upon. The farm extends to 100 acres or thereby, capable of growing all kinds of crops and specially adapted to fruit growing. There is a splendid orchard of about 500 trees on the property.

The house and buildings are commodious and suitable for the requirements of the place.

For further particulars apply to

J. Meiklejohn, Agent,
Cossar Farm, Lr. Gagetown, N.B.

BRED-TO-LAY

Barred Rocks, White Wyandottes
White Leghorns

Cockerels, $1.00 each; Trios, (cockerel and 2 hens), $3.00; A few Leghorn Yearling Hens, 75c each; some late Leghorn and Rock Pullets, $1.25 per pair,

ORCHARD HILL FARM,
Brown's Flats, - - N. B.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, NOVEMBER 9, 1915. Number 3.

GROWING THE POTATO CROP.

By F. Leslie Wood, Carter's Point, N. B.

The potato, one of our largest and most valuable crops, is one of the methods of culture of which can and should be greatly improved. The average yield in Canada is about 125 bushels per acre while it has been proven that the grower who practises proper methods of cultivation can easily grow a 300 bushel crop, this being far below the possible yield.

The Soil

Potatoes thrive and yield satisfactory crops in a large variety of soils. The ideal soil seems to be a deep, rich warm, sandy loam, containing a large amount of humus, which will insure the retention of a large amount of moisture. Potatoes will not thrive in cold, wet soils, so it is necessary that the land be well drained.

Potatoes yeild well when grown on sod, stubble or on new land. Such soils, because of the decaying vegetable matter or humus they contain, are retentive of moisture and furnish large quantities of available plant food. Potatoes grown on the heavier types of soil are neither as smooth in shape nor uniform in size as those grown on lighter soils, and are not as good in quality.

Preparation of the Land

As potatoes thrive best in a loose soil spring plowing is usually preferable to fall plowing. One of the best methods is to grow potatoes on a clover sod which has been top-dressed before plowing, with barnyard manure at the rate of 10 to 12 tons per acre. The manure may be applied either in the fall or spring, but if applied in the spring rotted manure should be used, while fresh manure will be satisfactory if applied in the fall. The plowing should be done deeply enough that the clover will be well covered. Further preparation of the land consists in harrowing thoroughly. If the planting is to be done on stubble the land would be prepared in much the same manner as outlined for sod. The manure, whether green or rotted, should not be applied in drills with the seed as this favors the development of scab.

Fertilizers.

Perhaps there is on more satisfactory way of supplying fertilizer for the potato crop than by plowing down a clover sod which has been top-dressed with manure in the method already described. However, commercial fertilizers are used to a large extent and if the farmer expects to use such fertilizers he should determine by experiment what elements of plant food his soil requires. While a fertilizer cannot be mixed which will meet the requirements of the potato crop in every soil, the following mixture should give good results when used together with barnyard manure:

Nitrate of Soda .....150 lbs.
Sulphate of Potash .....250 lbs.
Acid Phosphate .....300 lbs.

Planting

One of the most common methods of planting is to open furrows with the plow, drop the sets by hand, and cover with the plow. This is a fairly satisfactory method if the smoothening harrow is used after the plow to level off the ridges so that evaporation will not take place so rapidly. Where the acreage to be planted is large, the potato planter is needed. It has been stated that it is not well to put manure in the drills with the sets, but it has usually been found best to apply commercial fertilizers in the drills, as the potato plant has not a very extensive root system to enable it to secure the plant food in the fertilizer. Where the planter is used the fertilizer is sown at the same time as the sets are dropped. The sets should be planted in rows about 30 inches apart, the sets being placed from 12 to 14 inches apart in the rows. One quite common and very satisfactory way to do the planting is to drop the sets in, every third furrow at the time of plowing. After covering by plowing in this manner the ground should be well harrowed.

Potatoes for Planting

Considerable difference of opinion exists among potato growers as to what tubers should be selected for sets. Some advise using the smaller sized potatoes, some the medium in size, and some the large. Experiments show, however, that potatoes which are from medium to large in size, which are well shaped, and which preferably were taken from hills giving a high yield of marketable tubers should be used. The seed should undoubtedly be selected at the time of digging and not be merely the "left-overs" which are found in the cellar at planting time. The seed potatoes should be well stored and not allowed to send out long sprouts, as they will in a warm, moist, cellar, as this lowers the vitality of the tubers. As to the size of the sets, and the number of eyes to each set the best practice is to make good sized sets having two or three eyes each. The sets should be planted immediately after they have been cut. If it is absolutely necessary that they must be cut a considerable time before they are to be planted, the cut surfaces should be coated with gypsum or land plaster.

Time of Planting

For the main crop the best yield will usually be obtained by planting as soon as possible after the ground becomes reasonably warm and in good condition to work. As early market potatoes usually bring good prices, many growers plant as early as possible, risking the freezing of the sprouts in order to get their potatoes on the market early in the season. Where the growing of early market potatoes is practised it is customary to have the seed potatoes sprouted before planting. This is done by spreading them in trays or on the floor of a well lighted room where the temperature is not warm enough to cause a quick growth of sprouts and not cold enough to freeze. The tips of the early potatoes may be protected from a late spring frost by throwing earth over them with the plow.

Cultivation

The importance of a large supply of moisture, of available plant food, and of keeping the surface soil loose has been pointed out, so it will be understood that in order to meet these requirements cultivation must be thoroughly done. A few days after the planting, the ground should be harrowed with a smoothening harrow or weeder. This should be followed about a week later by another harrowing. These harrowings will kill the seedling weeds which are sprouting at this time and if well done there should be little hand hoeing necessary to keep the potatoes clean throughout the season. Following the harrowings the cultivator should be used every week or ten days or as often as is necessary to keep a loose mulch on the surface, until the tops of the potatoes cover the ground and interfere with the cultivation. The first cultivation should be given as soon as the rows can be well distinguished and may be done deeply and as near the plants as possible without injuring them. The following cultivations must be shallower or the roots will be injured.

The question as to whether potatoes should be planted on the level or in ridges in a large one, and each farmer should determine by experiment which method best suits his conditions. In general, level culture should be given where there is likely to be a lack of moisture and where thorough cultivation will be given. Ridge culture will be the more satisfactory where the soil is heavy, wet, cold ,or where cultivation is not so perfect.

Spraying

It is a common sight through some sections of country to see fields of potatoes which have otherwise had good attention stripped entirely of their leaves by the ravages of the potato beetle, or killed down by blight, and at the time of digging with ten, twenty, fifty or even seventy-five per cent of the crop rotted. This is a needless waste as both insects and fungous diseases can be easily controlled by spraying. Every potato grower should have some knowledge of the more common insects and fungous diseases in order that he can intelligently combat these pests.

The most destructive insect enemy of the potato is the Colorado potato beetle, known to farmers as the potato "bug" and so well known that further description of the insect is unnecessary. They can be controlled by spraying with either Paris green or lead arsenate. The spraying should begin at least as soon as the first larvae or young "bugs" are hatched and the foliage must be kept covered with the poison as long as the insects continue to do damage. With Paris green, 8 oz. to 40 gals. of water, with 1 to 2 lbs. of lime added to neutralize any free arsenic which might be present and which would cause burning of the leaves. From 2 to 3 lbs. of lead arsenate to 40 gals. of water are required. The Paris green kills more rapidly than the lead arsenate but the latter sticks better to the foliage and is not so easily washed off by rains.

The most troublesome fungous diseases of the potato are the early and late potato blights and the potato scab. The late blight is the disease causing the early killing of the potato tops and the subsequent rotting of the tubers and is well known to farmers as "the rust." The blight may be controlled by spraying with Bordeaux mixture. This is made of 4 lbs. of copper sulphate and 4 lbs. of good lime and should be made in the following manner. Dissolve the copper sulphate by hanging in a sack in a wooden vessel containing hot water. After it is dissolved add water to make 20 gallons. Slake the lime in a small quantity of water and after slaking add water to make 20 gallons. Then mix the copper sulphate solution and the lime thoroughly. Care must always be taken to dilute both lime and copper sulphate before mixing as this makes a mixture which will stay in suspension better than if they are mixed before being diluted. At least three sprayings of this mixture should be given to control the blight. The poison for the potato beetle may be added to the Bordeaux and applied at the same time. To control both blight and "bugs" spraying should begin early in July or when the larvae of the beetles first begin to emerge and feed on the leaves. Later sprayings should be applied as the mixture is washed from the leaves by rains or as the plants continue to grow. It should be borne in mind that spraying is a preventative of blight, not a cure, and so must be done early and thoroughly.

Potato scab is quite troublesome in some sections and is well known. It is a fungous disease and is most commonly found in fields in which the soil is alkaline in nature, or where the manure has been applied directly in the furrows at the time of planting. The spores of scab on potatoes used for seed can be killed by treating with formalin, using ½ pint of formalin to 15 gallons of water. The potatoes should be soaked in this solution for

(Continued on page 104)

Scores in the 1915 N. S. Field Crops Competition

ANNAPOLIS COUNTY

Judge: A. E. Humphrey

WHEAT COMPETITION

Name and Address.	Total Score
V. B. Leonard, Central Clarence	94
Arthur Phinney, Bridgetown	88
T. E. Smith, Central Clarence	87½
E. J. Shaffner, Lawrencetown	87
Chas. Foster, Clarence	83½
E. J. Elliott, Clarence	83½

OAT COMPETITION

E. J. Elliott, Clarence	92
L. W. Elliott, Clarence	90½
V. B. Leonard, Central Clarence	90
Arthur Phinney, Bridgetown	89
T. E. Smith, Central Clarence	87½

ANTIGONISH COUNTY

Judge: A. C. Tattrie

WHEAT COMPETITION

Jas. Dunn, Lr. South River	92¼
Ronald Chisholm, Briley Brook	92
Thos. Hogan, Harbour Road	91
Wm. Chisholm, Harbour Road	90
Ronald W. Chisholm, Glen Road	89½
John McLean, Addington Forks	89¼
D. R. Henderson, Copper Lake	89
Angus R. Boyd, Morristown	88¾
Alex. C. Chisholm, North Grant	88¼
Henry Baxter, Addington Forks	87¾
Daniel Duggan, Beech Hill	87¾
Dougald A.Cameron, Loch Katrine	87½
Alex McDonald, Doctor's Brook	87½
Thos. McDonald, Antigonish	86½
Alex. J. Chisholm, West River	86¼
Dan. Chisholm, Glen Road	86¼
P. J. Hanrahan, Fairmont	86
D. M. Cameron, Fairmont	85¾
D. L. Gillis, Doctor's Brook	85½
John A. Cameron, Loch Katrine	85½
P. D. Hanrahan, Fairmont	85
Colin McNeil, Fairmont	84¾
Cameron Chisholm, Salt Springs	84
John A. McDonald, Briley Brook	84

OAT COMPETITION

Ronald W. Chisholm, Glen Road	95¼
Crockett Bros., Antigonish	93½
J. G. Taylor, Antigonish	92¾
Mt. Cameron Farm, Antigonish	92½
John A. McDonald, Maryvale	92½
Alex. J. Chisholm, West River	92
Alex. H. McPherson, Up. S. River	91¾
Dougald A.Cameron, Loch Katrine	91½
Wm. A. McIntosh, Lr. South River	91¼
D. R. Henderson, Copper Lake	91¼
Colin McNeil, Fairmount	91
Thos. Hogan, Harbor Road	90¾
John T. Keating, Lochaber	90¼
John C. Chisholm, Lr. South River	90
John J. Chisholm, Malignant Cove	89¾
W. J. Walsh, Fairmount	89½
Will Chisholm, Harbor Road	89½
P. J. Hanrahan, Fairmont	89¼
Cameron Chisholm, Salt Springs	89
John A.McMillan, Up. South River	88½
D. R. Chisholm, Pomquet River	88
Jas. Thompson, Cloverville	87½
Jas. D. Hanrahan, Fairmont	87½
Dougald McGregor, Up.S. River.	87½
John J. Cameron, Fairmont	87
D. M. Cameron, Fairmont	86¾
Dan. Chisholm, Glen Road	86¾
John C. Chisholm, St. Andrews	86½
John J. Inglis, North Lochaber	86½
Wm. A. Chisholm, North Grant	86
Alex. C. Chisholm, North Grant	86
Alex. McDonald, Doctor's Brook	85½
G. F. McDonald, Middleton	84¾
Rod Chisholm, Lr. South River	84½
John A. Cameron, Loch Katrine	84½

CAPE BRETON COUNTY

Judge: H. S. Cunningham

WHEAT COMPETITION

E. J. Johnston, George's River	89
W. H. Kelly, George's River	88¼
A. W. Gillis, George's River	87½
Rev. J. W. McIsaac, East Bay	78¼
John McMullin, George's River	87
Rod McLeod, Grove's Point	86½

OAT COMPETITION

Edward McLeod, Big Pond	90½
Dan. A. McDonald, N.Side East B.	89½
John McMullin, George's River	88½
Joe Campbell, Big Pond Centre	88½
M. E. McNeil, Irish Cove	88½
W. H. Kelly, George's River	86½
Jas. A. McLeod, Grove's Point	86
Murdock P. McPherson, Big Pond	85¾
Rev. J. W. McIsaac, East Bay	85¾
Dan. McLellan, Big Pond Centre	85½
Stephen D. Gillis, East Bay	85¼
Murdoch McLellan, Big Pond Cen.	83½
A. D. Morrison, Big Pond	80¼
Rod McLeod, Grove's Point	77

COLCHESTER COUNTY

Judge: H. B. Langille.

WHEAT COMPETITION

J. R. Semple, Tatamagouche	95
J. L. Cunningham, Bayhead	94.75
J. W. Murray, Balmoral Mills	89.25
R. D. McKay, Balmoral Mills	89
Jas. R. Hogan, Denmark	87.25
Blair Cutten, Lower Truro	86.75
Alex Ross, East Earltown	84.5
Wilmot L. Fulton, Lr Stewiacke	83.25
Earl Jennings, Masstown	82.25

OAT COMPETITION

Geo. Burrows, Truro	91.5
Blair Cutten, Lower Truro	91
J. R. Semple, Tatamagouche	90.75
J. W. Murray, Balmoral Mills	90.5
Arnold Johnson, Lower Truro	90
J. L. Cunningham, Bayhead	89.75
Wilmot L. Fulton, Lr. Stewiacke	89.5
R. D. McKay, Balmoral Mills	89
A. B. Cunningham, Tatamagouche	88.5
Alex. Ross, East Earltown	87.5

CUMBERLAND COUNTY

Judge: H. B. Langille.

WHEAT COMPETITION

W. L. McFarlane, Fox Harbor	92.25
Herbert Atkinson, Maccan	92
C. C. McFarlane, Fox Harbor	91.5
John R. Harrison, Maccan	90.25
L. G. Stevens, Wallace Grant	89
M. B. Harrison, Maccan	87.5

GUYSBORO COUNTY

Judge: T. Hodgson

WHEAT COMPETITION

John A. Sinclair, Goshen	90¼
John A. McLean, New Town	90
James W. McIntosh, Goshen	89¾
John F. Forbes, Goshen	88
John McNeil, South River Lake	83

OAT COMPETITION

Arthur J. Sinclair, Goshen	91¼
John A. Sinclair, Goshen	91
Alex. T. McBain, New Town	90¾
Harry Sinclair, Goshen	90½
A. F. McNaughton, Goshen	90
Ronald McIsaac, Giants' Lake	89½
John F. Forbes, Goshen	89¼
T. C. McLean, Denver	88¾
Mrs.Catherine McLean, Porters R.	88½
Dan. McNeil, South River Lake	88¼
Leonard A. Sinclair, Goshen	88
W. Sutherland, Denver	87
Edward F. Sinclair, Goshen	86½
John F. Wall, Goshen	84½
Stanley Sinclair, Goshen	84

HALIFAX COUNTY

Judge: T. Hodgson

WHEAT COMPETITION

Geo. Burris & Son, Up. Musquodoboit	92
Robert S. McCurdy, Middle Musquodoboit.	91½
John Ogilvie, Elderbank	91¼
Robert Kaulbach, Middle Musquodoboit	89½
Adams Archibald, Middle Musquodoboit	89
R. H. Reid, Brookvale	87½
M. H. Guild,Middle Musquodoboit.	86

OAT COMPETITION

John Ogilvie, Elderbank	91¾
Robt. Kaulbach, Middle Musquodoboit	90½
R. H. Reid, Brookvale	90
Arnold Gladwin, Middle Musquodoboit	89½
Ernest Redmond, Deans	89¼
G. Burris & Son, Upper Musquodoboit	89
Robt. S. McCurdy, Middle Musquodoboit	88¼

INVERNESS COUNTY

Judge: Dr. Hugh McPherson

WHEAT COMPETITION

A. Scott McDonnell, Port Hood	97.25
A. R. McDonald, Broad Cove Chapel	93.75
Alex. Rankin, Judique	93.25
Rev. John McLellan, Glendale	93
A. T. Beaton, Brook Village	92.50
C. AuCoin, Belle Cote	90
B. F. Smith, Blackstone	89.25
Alex. R. McIsaac, Inverness	89
Alex. D. Cameron, Mabou	89
Dan. A. McIsaac, Inverness	88.5
Eddy Smith, Blackstone	88.25

OAT COMPETITION

A. J. Campbell, Beatonville	96.5
Dunc. Campbell, Margaree Forks	95.75
James Beaton, Beatonville	95
A. Scott McDonnell, Port Hood	94.5
R. Dan McDonald, Broad Cove Chapel	94
James McDonald, S. W. Mabou	93
Eddy Smith, Blackstone	93
A. T. Beaton, Brook Village	92.75
James M. Murphy, N.E. Margaree	92.25
H. A. McPherson, Mabou	92.25
A. R. McDonald, Broad Cove C.	92
John E. Beaton, Inverness Cr.	92
Constant AuCoin, Belle Cote	91.75
P. N. Tompkins, N.E. Margaree	91.5
John Beaton, Blackstone	91.5
Louis L. Smith, Blackstone	91.25
James B. McLeod, West Bay	91.25
Wm. McLean, North Ainslee	90.75
Patrick Gillis, Margaree Forks	90.75
J. J. McLellan, Glenville,	90.75
Alex. Campbell, Beatonville	90
John A. Campbell, Glenora Falls	89.75
John A. Chiasson, Margaree F.	89
Arthur Munro, Margaree Harbor	89
Horace L. Smith, Glendyer	89
Angus A. McDonald, S.W. Mabou	88.5
Angus J. Boyd, Glendale	88
Mrs.D.Campbell, Margaree Forks	86.75
Peter McDaniel, Margaree Forks	85.75
Michael Tompkins, Margaree F.	85.5
Alex. Rankin, Judique	84
B. F. Smith, Blackstone	81.5

LUNENBURG COUNTY

Judge: A. E. Humphrey

WHEAT COMPETITION

O. G. Dauphinee, Bridgewater	91½
Jas. Mader, Bridgewater	91
Chas. Wile, East Bridgewater	89½
Levi Hebb, Bridgewater	84
Artemas Joudry, Bridgewater	80¾

OAT COMPETITION

Wallace Rhodenizer, Bridgewater	95
A. W. Hebb, Bridgewater	94¾
O. G. Dauphinee, Bridgewater	94¼
Albert Veinot, West Northfield	94
Joseph Kaulbach, Bridgewater	93
D. A. Newcomb, Newcombville	92½
Mark Rhodenizer, W. Northfield	91½
Artemas Joudry, Bridgewater	91
Jas. Mader, Bridgewater	90¼
Alzonas Silver & Son,Bridgewater	85½
Asaph McKay, Upper Northfield	82½

PICTOU COUNTY

Judge: S. J. Moore

WHEAT COMPETITION

R. D. Ross, Bayview	97
Alex McKay, Pictou	94
James Maxwell, Durham	91½
H. M. Tattrie, River John	91
Calvin M. Langille, Marshville	89
C. D. Langille, Marshville	81½

RICHMOND COUNTY

Judge: H. S. Cunningham

WHEAT COMPETITION

John J. Johnston, Red Islands	92¼
Murdoch McInnis, St. Georges Ch.	90¼
Reynolds Smith, Arichat	88½
W. H. Ross, St. Georges' Channel.	82
Benj. McKenzie, St. George's Ch.	81¼
F. McInnis, St. George's Channel.	79¾
Jas. H. McIntosh, Dundee	79½
Jas. D. Calder, St. George's Ch.	75½
Arch McCuish, Lochside	69

OAT COMPETITION

John J. McDonald, Soldier's Cove.	96¼
Rev. R. L. McDonald, St. Peters.	95½
Wm. Kemp, L'Archeveque	94¾
Geo. J. Matheson, L'Archeveque	94¼
Wm. A. Urquhart, West Bay	94
Alex. G. McKay, Grand River	92
M. A. McCuspic, Grand River	91¾
John J. Johnston, Red Isles	90
Alex. Matheson, St. Esprit	90
Joseph Gillis, Soldier's Cove	90
Martin Gillis, Soldier's Cove	87½
John F. Gillis, Soldier's Cove	87¼
John R. Ferguson, Ferguson's Lk.	87¼
Dan. A. Matheson, L'Archeveque.	86½
Angus A. McDonald, Soldier's C.	86¼
Allan H. McDonald, Soldier's Cove.	85¾
Michael McDonald, Soldier's Cove.	85½
Dan. M. McAulay, Gr. River West.	83½
Murdoch D. Finlayson, Gr. River.	83
Rod A. McLeod, Lewis Cove Rd.	82¼
Archie C. McBeth, Grand River	82
A. D. McLeod, L'Ardoise Highl'ds.	81½
John McAulay, Grand River W.	80½
Angus A. Morrison, L. Lomond W.	80
John L. McAulay, Grand River	77½

VICTORIA COUNTY

Judge: Dr. Hugh McPherson

OAT COMPETITION

Farquhar Buchanan, Baddeck F.	95½
H. G. Matheson, Hunter's Mt.	93¼
A. J. McRitchie, Baddeck Bay	92¾
P. K. McIvor, Baddeck Bay	92¼
Farland McFarlane, Baddeck	90¼
Everett Rice, Baddeck Forks	89¼
F. A. McRae, Baddeck Bridge	88½
A. D. McRae, Baddeck	87½
C. R. McDonald, Nyanza	87¼
J. W. Campbell, W. Middle River.	87¼
Abner Crowdis, Baddeck Bridge.	85
J. A. McDonald, Up. Middle River.	85
Neil McKinnon, Kemp Head	84½
Duncan McLennan, Up. Middle R.	84½
Forbes McDonald, Middle River	82¾

YARMOUTH COUNTY

Judge: A. E. Humphrey

OAT COMPETITION

John Corning, Chegoggin	93
Adolphus Corning, Chegoggin	92½
Clifford Cann, Chegoggin	92¼
S. A. Cook, Central Chebogue	92
Murray Crosby, Dayton	90

POTATO COMPETITION

DISTRICT NO. 5—Cape Breton, Inverness, Richmond and Victoria Counties.

Judge: H. S. Cunningham

Name and Address.	Total Score.
James A. Beaton, Beatonville	91
John J. Johnston, Red Islands	90
H. A. McPherson, Mabou	89½
J. J. McLellan, Glenville	89½
John A. Campbell, Glenora Falls.	89¼
Eddy Smith, Blackstone	86½
A. T. Beaton, Brook Village	86¼
Arch McCuish, Lochside	86
John Beaton, Blackstone	85¾
C. AuCoin, Belle Cote	83¾
John McMullin, George River	83¼
Mrs. D. Campbell, Margaree F.	83
Alex. Rankin, Judique	82
Peter McDaniel, Margaree Forks.	82
Alex. L. Gillis, Margaree Forks	81½
Patrick N. Tompkins, E. Margaree.	81½
A. J. Campbell, Beatonville	81½
J. Arch McDonell, Judique Interv.	81
D. R. Nicholson, Coxheath	80
J. W. Campbell, W. Middle River.	78
F. A. McRae, Baddeck Bridge	76
Arthur Smith, Blackstone	76
Allan Rankin, N. E. Mabou	71

DISTRICT NO. 4.—Halifax, Guysboro, and Antigonish Counties.

Judge: H. B. Langille.

James Thompson, Cloverville	91
John Inglis, North Lochaber	90½
Geo. Burris & Son, Up. Musquodoboit	90¼
Ernest Redmond, Dean	90
Alex. C. Chisholm, North Grant	86
Dougall McGregor, Up. S. River.	83
Alex. H. McPherson, Up. S River	82¾
Adams Archibald, Middle Musquodoboit	74½
Alex McDonald, Doctor's Brook	74

DISTRIST NO. 3.—Pictou, Cumberland and Colchester Counties

Judges: F. L. Fuller and S. J. Moore.

Calvin Langille, Marshville	89

John R. Harrison, Lr. Maccan ...86½
Wm. MacKenzie, Green Hill.....86
J. W. Maxwell, Durham.....83
Geo. Retson, Up. Brookside.....80
R. D. Ross, Bayview 79
Fowler Bros., Amherst Pt. 78
J. W. Logan, R.R. No. 1, Pictou...77½
Blair Cutten, Truro 70

DISTRICT NO. 2.—Annapolis, Kings, Lunenburg and Hants Counties.

Judge: F. L. Fuller

Albert Veinot, West Northfield...92¼
James Mader, Bridgewater 89
Owen Dauphinee, Bridgewater...87½
Scott Hebb, Bridgewater.....87½
Annand Hebb, Bridgewater 86¾
A. W. Hebb, Bridgewater.....86¼
Wallace Rhodenizer, Bridgewater.83½
Levi Hebb, Bridgewater.....82½
Alzonas Silver & Son, Bridgewater 82
Asaph McKay, Up. Northfield.....81½
Hiram Corkum, Baker's Set'ment.80½

The Cheese Industry in P. E. I.

Editor, Maritime Farmer:

The Maritime Farmer, of October 26th, contains an article on The Cheese Industry in Prince Edward Island, by J. A. McDonald, which is not accurate in all its details.

Since 1900 the net value of milk to patrons per hundred pounds has been considerably higher when the milk was made into cheese than when made into butter. In five years milk made into butter gave a better net return clear of the skim milk but in the other years the cheese. Your correspondent says that "cheese will rule this year around one dollar a hundred for the milk." This is altogether too low an estimate. The price of cheese has been higher this year than any year since dairying began in Prince Edward Island, and last year the average net value of milk per hundred pounds from cheese was about $1.09. Only three factories in the province went below $1.00 and the total receipts at these three factories were 620,000 lbs. of milk, while Emerald, with a total receipt of 2,055,731 lbs., paid $1.11 per hundred pounds, net value to patrons. Last year only four creameries in the province paid over $1.00 per hundred for milk manufactured into butter, and most of this milk was produced in the winter when production costs more and when the price of butter is liable to be higher. The average price of milk sent to the butter factories was about 90c per hundred pounds, while one creamery receiving half a million pounds of milk paid only 78c per hundred pounds.

There is no doubt but that intelligent farmers would prefer patronizing the creamery rather than a cheese factory because the skim milk is very valuable on the farm, but it is doubtful if the average farmer will make 33c per hundred pounds out of it.

Further, your correspondent is correct when he speaks of the quality of Island cheese but Island butter has not the same reputation.

Further, there is an unlimited market for cheese, while up to the present time the butter market has been limited almost altogether to the Maritiem Provinces, and if all the milk that was produced in Prince Edward Island was being manufactured into butter there is no doubt but that the price of butter would be much lower than it has been. In fact there is very considerable difficulty every summer in disposing of the butter, and farmers should be careful about dropping the production of cheese and taking up the production of butter.

The ideal plan, and the only one that will make dairying profitable in Prince Edward Island, is the production of milk the whole year round, and if that were done cheese might be made in the summer and butter in the winter months.

Your correspondent is entirely astray when he states that "none of the factories take milk by test." Every cheese factory and creamery on Prince Edward Island pays for milk by its test and has been paying that way for a number of years. The writer has yet to learn of any creamery or factory that has not done this since 1900.

Again, it may be possible to accept milk at a creamery that has been slightly soured but no cheese-maker would think of accepting it as the milk would not curd properly.

Our farmers do not follow slipshod and indifferent methods, and the cleanest and richest milk will be found in the districts that are giving most attention to dairying. Several of the factories on Prince Edward Island are grading the cream, and the dairy industry, although probably not as prosperous as it should be, is being run after the most approved methods, and among the most prosperous districts in this "garden province" are those that have been following "cheese-dairying."

Yours truly,

FARMER.

N. B. Agricultural Schools.

Hon. J. A. Murray Tells of What They Will Stand For--Have Been Established Under Advise of Dr. C. C. James.

Hon. J. A. Murray, New Brunswick's Minister of Agriculture, speaking of an article on Agricultural Schools in New Brunswick, tells the Maritime Farmer, that no definite policy in regard to this important feature of his department has yet been formulated. It was expected that an announcement would have been made long since, but with the agricultural staff of the province depleted through the enlistment of several of its members, there has been an interruption of the pending ararngements, and unlooked for delay in developing the schools along the lines intended.

The schools of New Brunswick are intended to be vocational or preparatory institutions. It is never hoped that they will become colleges, in fact the minister expressed himself as strongly opposed to the establishment of a college in this province, thus duplicating the particularly well equipped agricultural colleges of other provinces. The New Brunswick schools have been established on the advice and under the direction of Dr. C. C. James, commissioner for the administration of the Dominion agricultural grant system as that which has won such signal success and high recognition in Alberta, where the difficulty has been to supply facilities with sufficient rapidity to handle the large number of pupils offering themselves for instruction.

All the work done so far in New Brunswick has been with the full sanction of Dr. James and within the next few days he will be in New Brunswick for another conference, which may be followed by an announcement of importance. The idea is to have three school centres, two of which, at Sussex and Woodstock, are already fixed and a third on the North Shore. Under this system it is felt that the elements of agricultural education can be brought right to the door of farmers' sons. By short courses, boys will be given an incentive to aim at higher agricultural education, and should they decide later to go to one or other of the larger institutions, the government of the province will assist them to the extent of providing transportation to the college selected. The schools will also be used for giving instruction to public school teachers and a course for the clergy of New Brunswick is also contemplated.

Speaking of the need of an agricultural college in New Brunswick, Mr. Murray stated that he could not see the necessity of one. It would result in the duplication of very excellent institutions in other provinces, notably that maintained by the government of Nova Scotia. Of the latter institution and its accomplishments, Mr. Murray spoke in the highest terms and declared his staunch support for it and its staff. He believes that the New Brunswick schools, giving the boy, as they will, a desire for higher agricultural education, will serve as recruiting grounds for the Nova Scotia and other colleges. The desire of the New Brunswick department is to give a practical grounding in agriculture, through the employment of short courses, attractive to those who might otherwise never enter an agricultural school. Once pupils are brought into contact with their studies and realize what they mean from an everyday business standpoint, it must follow that many of the more ambitious will decide to take the longer college courses. Thus the schools will accomplish much. When the policy in regard to the schools is finally determined, after some further consultations with Dr. James, and after they are equipped and the sadly depleted staffs refilled, Mr. Murray feels that the province will have the advantage of a system which will duplicate the work of the Alberta institutions.

A Not-Too-Well-Known Goat.

"Most parts of Canada where live stock production prevails are suitable to the raising of Angoras, especially if the land is high and dry the greater part of the year. They will withstand the rigor of even the coldest winter and do not require any greater shelter than a shed to protect them from wind and storm, providing a sufficient quantity of nutritious food and pure water are supplied. The Angora goat performs a two-fold service in the Canadian scheme of farming. It produces a high grade of mohair and at the same time may be used for the destruction of underbrush on lands to be broken for subsequent cultivation." Such is one of the opening paragraphs of Pamphlet No. 12 of the Sheep and Goat Division of the Live Stock Branch devoted to the Angora Goat and a general discussion of methods of management, feeding and breeding, and of mohair production, by T. Reg. Arkell, B.S.A., B.Sc., and Horace V. Bent, B.A., that can be had at no cost whatever by application to the Publications Branch, Department of Agriculture, Ottawa. The Pamphlet gives a brief sketch of the origin and history of the Angora, which from being a native of Turkey in Asia, has travelled somewhat extensively into South Africa, is fairly well known in the United States and not as well known in Canada as desirable. Mohair, of which Turkey in times of peace, supplies 10,000,000 lbs. annually. South Africa 15,000,000 lbs. and the rest of the world 6,000,000 lbs., is the technical name given the hair of the Angora goat. The word is derived from the French "mohere" and, primarily, from the Arabic "mukhayyar," meaning mohair cloth. This, with a vast deal more information about a particularly useful goat, is furnished in the information under notice. Nature and the necessary treatment for breeding and raising are set forth with details of market possibilities, of shearing, of grading, and of preparation for shipment. Extracts from letters written by successful breeders in Canada and the United States telling of their experience are printed as well as some account of the complaints to which the animals are occasionally subject, with advice as to preventive and remedies. Illustrations of types and the Fleece carried at our agricultural exhibition, exposition and interest to the pamphlet.

Cereals.

Seed Grain.—Early attention should be given to the seed grain that is to be sown next season. If no special fields for seed purposes were grown last summer, next season's requirements may be met by very careful cleaning of the main crop harvested last autumn. One can never afford to sow weed seeds and one can seldom afford to sow grain more or less mixed with other types. The fanning mill should furnish plump seed free from weeds. If other grains are present, such as oats in wheat, or barley in oats, it will be necessary, and quite worth while, to hand-pick two or three bushels during the winter so as to have a field of an acre or two to furnish pure seed for the following year. Hand-picking may appear too laborious to anyone who has not tried it, but by devoting to it an hour or two at a time a great deal can be accomplished in the course of a few weeks and without undue strain on the eyes.

If there is any doubt about the vitality of the seed, it should be tested either at home (as described in "Seasonable Hints" No 1.), or a sample sent to the Dominion Seed Branch at Ottweeds.

Change of Seed.—The best advice in regard to change of seed is this: Change only when you are sure you are getting something superior to your old stock. The new grain should be true to variety and free from weed seeds. A very great danger in obtaining seed from a long distance is that it may contain new and dangerous weeds.

Purchase of Seed.—If new seed is to be purchased, enquiries should be made early in the winter from those who have grain for sale. No large purchase of seed should be decided upon without first seeing a sample and obtaining a statement as to its germination, and as to the quantity of other grains present.

To intending purchasers of seed grain the Dominion Cerealist will be glad to furnish information as to possible sources of supply of the varieties they desire. Farmers who have seed grain for sale are requested to communicate with C. E. Saunders, Dominion Cerealist.

Smut Infection of Grain.

An experienced, practical farmer, reported to us this season 50 per cent smut in the oat field of his neighbor. If that man uses a threshing machine, it will be infected to such an extent that clean oats threshed in it may become infected and develop 50 per cent smut.

Winter threshing is occasionally practised. Use a clean machine, one that has not been used for smutty grain, or if so used, dip some old sacks into a solution of formalin (one pound to one gallon of water), wring them out and stuff them into the body of the machine and close it up. Five hours' fumigation will kill the smut spores. Spray the outside of the machine, or wash it, with the same solution. Fanning mills, threshing machines and implements infected with smut spores will contaminate clean grain. This is how many new infections of the crops of careful farmers take place.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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NOVEMBER 9, 1915.

DATES OF ISSUE.

November ..... -23
December 7-21
January 11-25

AGRICULTURAL COURSES FOR CLERGYMEN.

It is announced that the New Brunswick Department of Agriculture will hold a short course for clergymen in the Sussex Agricultural School early in the New Year. The question is asked by stand-patters, particularly those who do not see any virtue in any move that is made by any party other than their own, "What is the use or the sense of holding an agricultural course for clergymen "

To men who guffaw at the idea of holding such a course the Martime Farmer has only one thing to say: Stop braying lest you betray the class to which you belong.

There is a class of people who are of the opinion that secular and temporal matters do not mix and like the late Joseph Matheson, ex-M.P. for Richmond County, N.S., told his minister, who was particularly anxious about the finances for a heating system for his church: "Go home and attend to your praying and I will attend to the financing." We believe a minister can attend to his praying and to some work of a temporal nature that will also be of actual benefit to his parishioners.

The writer is personally acquainted with clergymen of all denominations who are interested in agriculture. These men of God are able to talk intelligently on farming topics with the young men of their parishes. Not infrequently they point the way not only how to increase their treasures in heaven but also how to increase their treasures on earth. And we believe they are succeeding better in getting in closer touch with the various members of their flock where they are capable in assisting in temporal affairs.

We have in mind a certain staid Scotch congregation that had a neat grievance against their pastor just because he used to go to the woods and chop his own firewood—infra dig—as it were. What nonsense! The minister in question was one of the brainy minds of his denomination. Exercise in the open air and good living helped him to retain those faculties to a ripe old age. There have been a few funerals in that congregation and not a few old fogies have passed away and their antiquated ideas have been buried with them.

In passing we need only refer to Rev. Dr. McPherson's good work in Antigonish County. Rev. Hunter Boyd's excellent influence in Charlotte County and Rev. Dr. Gauthier's example in Prince Edward Island, as concrete instances of what some other clergymen could accomplish along similar lines.

What Father Gauthier has been able to accomplish at Palmer Road by his untiring efforts is an interesting story that we purpose to give our readers at an early date. Suffice it to say for the present that his parishioners are making rapid progress in temporal things and spiritual matters are not by any means neglected.

Would that there were more Dr. Gauthiers, Dr. McPherson's and others like them. The short course at Sussex will help spread the movement. The move is good. Help it along. In some districts it is considered akin to sacrilege to hold a meeting of any kind other than that of a religious nature in their churches and halls. The most progressive communities today are making their churches the social centres where everything that tends to benefit the district is fostered.

The following clipping from the "News notes of the Colorado Agricultural College shows how they do things in Colorado. Read it. There may be an idea in it that will benefit you and your district:

Farmers' Unions Meet in Churches.

"In many of the rural communities in Colorado "not only are the churches used for worship, but "as meeting places for the farmers' unions and "other agricultural organizations. According to "the pastors, the result of opening the churches "for such meetings has shown a decided gain in "the attendances at the religious and of course a "betterment of the moral standing of the people "of the community.

"With reference to the holding of such meet-"ings, Rev. Oren Orahood, pastor of the church on "the S. L. W. ranch near Gill, Colorado, says, 'We "endeavor to make the church a social and agricul-"tural centre. The Farmers' Union at Gill and the "Men's Brotherhood at S. L. W. meet at the church "once a month to discuss their problems and have "a social hour together. Occasionally they have "some expert in some agricultural line to give "them an address.'"

THE FARMERS PLAY.

Perhaps you don't want to play, or you think you're too old, or you say you've forgotten how! No one is too old, nor too stiff, no one "doesn't want to play" although there may be a few who think they've forgotten how. All the sorrows in life may be helped to be eliminated by some active form of play or pleasure. It is good for man to play and for the farmer most of all!

You say that you do not need exercise, but that is a wrong impression, for your daily work tends to make you stiff and does not develop the fine, delicate muscles that bring ease, grace and bodily control. All active out-of-door games tend to this development. Why not play with your wife, with your children, with your neighbor and make the most of what there is in life for you? For an hour after supper take time to play tennis, base ball, volley ball or some form of amusement in which you are particularly interested. Your work will hold a keener joy for you, for you will have unconsciously acquired the attitude of play toward it.

You can never take wealth nor material possessions with you when you leave this world, but you can give to it and gain from it much of pleasure in the pure enjoyment of the good and happy things of life. We were made to be happy, and the greatest material happiness comes through the enjoyment of some form of recreative sport, after a day of good work well done.

Don't sit on the side lines and watch! Come into the open and play! Drop your work for a few moments every day and play with your children, for verily a little child shall lead you back into that long forgotten kingdom of early joys and greatest of opportunities, your youth and all it held for you.

THE APPLE CROP WILL REQUIRE CAREFUL GRADING.

Owing to the development of scab in almost every district, packers will be required to exercise very great care in sorting the fruit. The inspection records show that the greatest number of violations occur in years such as the present one, when prices rule high and fruit is scabby. The requirements of the Inspection and Sale Act, Part IX, does not change with the varying conditions of the crop from year to year.

It is reasonable to expect that owing to the short crop, there will be a demand for all marketable fruit, and even No. 3's, if of good size though slightly scabby, should bring fair returns to the grower. The very small, immature No. 3 fruit should never be packed as it will not pay for barrel and freight.

EDITORIAL NOTES

Expect the best of life, then you are more likely to work toward it and to get it.

* * *

Young man, when you ask for a "chance," what do you mean? Do you mean an opportunity to make good? Or do you simply mean a chance to get money without effort?

* * *

The greatest mischief in handling farm stock comes from improper food, filthy or impure drinking water, bad ventilation of stables, overwork or lack of exercise and poor sanitary conditions.

* * *

The man on the farm wants to get into town so as to get rid of the "daily grind" of farm life. The man in the city wants to get "back on the farm" to escape the "daily grind" of the city. And so it goes, everybody trying to escape their own grinnd. And yet no man ever made a success of life in any spot or place who was looking for a chance to escape the "grind."

* * *

Take things as they come, but make them come the way you want them to.

* * *

You'll never know what you can do till you try.

* * *

Accidents are no more a matter of ill luck than good fortune is a matter of good luck.

* * *

The man who has learned that it is just as easy for him to be wrong as for the other fellow, has acquired valuable knowledge.

* * *

One year's seeding, seven years' weeding. Burn all weedy rubbish.

Underdrainage.

Editor the Maritime Farmer:

Much has been said and written on the subject of underdrainage, showing why we should drain our soils, of how drainage affects or assists in the pulverization, how it lightens the work of the farmer, lengthens out the season for work, preventing the washing of soils, promoting absorption, adapting the soil to germination, the effect on temperature, the improvement in the quality of crops grown, the loss of heat caused through the lack of underdrainage, chilled air, soil breath, etc., but none of these in the mind of the writer are of greater importance to the individual and hence to the nation at large, than the last mentioned, namely, **soil breathes.**

One at first thought might be tempted to say that this is an unheard of thing, it must be some new "fad" of the scientist, but not so. Have you ever thought how everything breathes, animate and inanimate alike? We inspire air continuously, and thus keep ourselves in good condition, and so does your coat and jacket. The air penetrates every fibre of our wardrobe, passing in and out, and carrying out something it did not carry in. If your clothing was impermeable to air you could not tolerate it for an hour. The invisible waves of air wash and purify you every hour. Many examples could be given to prove the above, but space will not permit.

Water Stops Soil Breathing

If the walls of the house are wet, the passage of air is prevented. In the same way, if soil is drenched, or soaked with water, the passage of air is prevented. It will pass through 14" of dry soil more easily than through 4" of wet soil. Indeed, the air will not pass at all through a thin stratum of wet soil, but will readily pass through a thick stratum of dry soil. You thus see that a drenched soil is a drowned soil; that all the conservative influences secured by the itneraction of soil and air are cut off short by the presence of ground water.

The sanitary report for England, some years ago, gives the following conclusions in respect to the influence of soil dampness.

1. Excess of moisture, even on lands not evidently wet, is the cause of fogs and dampness.

2. Dampness serves as a medium of conveyance for any decomposing matter that may be evolved, and adds to any injurious effect of such matter in the air; in other w rds, the excess of moisture may be said to increase or aggravate excess in impurities in the atmosphere.

3. The exaporation of surplus moisture lowers the temperature, produces chills, and creates or aggravates the sudden and injurious changes of temperature by which the health is injured.

4. Catarrh and rheumatism are natural products of the chills and damps of un undrained soil. Diarrhoea, dysentry and malarial fevers in districts where ground water abounds and the water-line approaches the surface.

Finally, extensive researches in England, Germany and America have established the fact that undrained soils greatly promote consumption. This much to be dreaded disease, the direct cause of one-seventh of the deaths in the world, finds its favorite haunt in the water-logged soil. This is no wild guess, thrown out to be the sensation of the hour, but it is sustained by a vast array of facts, and is a result independently reached by separate investigators in widely separated countries. However precarious may be the field crops on a water soaked soil, the abundant house crop of consumptives may be safely counted upon. The entailments of living on water-soaked and undrained soils, therefore, are catarrh, ague and rheumatism in the spring; diarrhoea, dysentry and fever in the hot months; pleurisy, pneumonia and diphtheria in cold months, and consumption the year round. We have histories of races and dynasties, their rise, progress and decline, the causes which brought them into prominence and the forces which brought them to their downfall. Why should not the soil have likewise a history of its own and take on a personality as truly as a race? Let us scan the features of such a farm and follow the history springing from its inherent qualities. The surface is somewhat level or gently undulating. the soil a tenacious clay, strong in the elements of enduring fertility, if the physical conditions are properly adjusted, the natural drainage is very slight, except that much of the surface water can run off by overflow, but the tenacious quality of the soil prevents all deep drainage; the deeper soil is water-soaked in the spring and early summer, and at other times when heavy rains fall; gate and fence posts are heaved out by the frosts; winter wheat and clover are half uprooted by the same force, work is late in the spring because the soil is cold and wet, crops are slow to start and slower to ripen. The farmer has a "hard roe to hoe." A hopeful and cheerful spirit is conspicuously wanting because he has generally poor success with his crops. "Bad luck" and because of his continuous depression of poor health. The furrows seam his cheeks early. His shoulders stoop when he should stand erect in manhood's prime.

Indoors the wife soon fades, the bloom and laugh of happy girlhood gives place to the chronic invalidism of motherhood. Children are born only to die, or linger on in joyless ill health. The family is finally blotted out, unless a surviving son may hand down their heirloom of sorrow to another generation, when the farm passes into other hands to repeat the same story. And thus we see in hopeless succession the generation of joyless owners pass before our eyes. The doctor, the undertaken, and the sheriff enter in succession to shift the stage of scenery, but the sad drama goes on with little variation.

Is this all a fragment of imagination? Can you not tell farms where many of these features can be traced in the water-soaked soil? Examples of this kind might be quoted by the hour. But when houses are built upon retentive water-soaked soils, and no means employed to take off the ground water, or ward off its effects, the harvest of woe is sure, though it may be slow to ripen.—John Woods.

A Visit to the Basic Slag Works at Sydney, N. S.

Recently the editor of this paper spent a very instructive afternoon going over the Basic Slag Works of the Cross Fertilizer Co., Ltd., at Sydney, N.S. These works cover an area of over six acres and were erected to deal with the basic slag produced by the Dominion Iron & Steel Co., Ltd., as a by-product in the Bessemer process of steel making. All Slag produced at the steel works is not of value from an agricultural point of view. Only basic slag containing phosphoric acid in a soluble state is suitable for fertilizing proposes. The slag utilized by the Cross Fertilizer Co. is obtained in the elimination of the prosphorus from the iron during its conversion into steel. At the Bessemer furnaces the slag is poured into cars having removable sides. These cars hold from ten to fifteen tons of slag which solidifies after a short time, and they are then run by private railway to the slag works. The sides of the car are removed and a crane is hitched on to the block of slag which is deposited quite close to the grinding mills. These blocks of slag are then broken by a drop ball weighing 3,000 lbs. falling from a height of thirty feet. By this means it is reduced to pieces not more than seven pounds in weight, after which it is loaded into bogey cars holding about 1,500 pounds and run into a hoist and elevated to a large hopper holding one hundred tons.

The slag is mechanically tipped into this hopper from which it is fed by a travelling conveyor to a couple of ball mills. The mills are loaded with a charge of 3,500 pounds of steel balls, each five inches in diameter, and are driven by steam at the rate of 25 revolutions per minute. The slag undergoes pounding in the ball mills which reduces it to a rough powder, all of which will pass a seive having twelve mesh to the inch.

From the ball mills the slag is conveyed to a tube or finishing mill. The tube mill is a steel cylinder, thirty feet in length, containing ten tons of steel balls of assorted sizes ranging from three-quarters to two inches in diameter. The slag passes in at one end of the mill, which is driven at the rate of thirty revolutions per minute and the pounding of the steel balls completes the process of grinding. The finished product finally passes from the mill ground so fine that over 80% will pass a 100-mesh seive, that is a sieve having 10,000 holes to the square inch. From the tube mill the ground slag is taken by an overhead conveyor to the warehouse where it is bagged and weighed automatically and stored until required by the farmers for application to their land in the autumn or spring. The mills have a capacity of 10 tons per hour, and working day and night, can easily turn out 1000 tons per week.

As slag is not in consumption all the year round, very large storage capacity is required and the Cross Fertilizer Co., Ltd., the proprietors of the basic slag works, has had to erect a warehouse 365 feet long by 150 feet wide, capable of holding 15,000 tons of the finished product. A railway runs through the entire length of the warehouse and when necessary 12 cars can be loaded at a time. The mills are driven by a 500 h.p. engine supplied by Fullerton, Hodgart & Barclay, Ltd., of Paisley, Scotland, to which steam is furnished by two Lancashire boilers by Penman & Co., of Glasgow, Scotland. The entire cost of buildings and plant amounted to $200,000.

The demand for Sydney Basic Slag is increasing every year. Grinding at present is going on at the rate of 100 tons every 24 hours, and in view of the shortage of supplies last season many buyers are taking delivery now. It is expected that there will be a considerable increase in the production of basic slag during the coming season on account of the active state of the steel trade, but every ton that can be produced will be needed to supply the wants of Canadian farmers.

New Grades of Seed Grain.

Special grades for seed wheat, oats and barley are now authorized by Order-in-Council as follows:

No. 1 Manitoba Northern seed wheat shall be composed of 85 per cent Red Fife or of Marquis wheat, sound, clean, free from other grain, and free from noxious weed seeds within the meaning of the Seed Control Act, weighing not less than 60 pounds to the bushel.

No. 1 Canada Western seed oats shall be composed of 95 per cent white oats, sound, free from other grain, and free from noxious weed seeds within the meaning of the Seed Control Act, weighing not less than 36 pounds to the bushel.

No. 3 Extra Canada Western seed barley shall be composed of the six-rowed barley, sound, plump, of fair color, free from other grain, and free from noxious weed seeds within the meaning of the Seed Control Act, weighing not less than 48 pounds to the bushel.

These special grades will be given for the crop of 1915 only on car lots of grain that are inspected into the government interior terminal elevators at Calgary, Moose Jaw and Saskatoon, and the seed will be made available to farmers and seed merchants at the close of navigation or about December 1st. The advance in prices over commercial grades will be just sufficient to meet the extra dockage required and the cost of cleaning, storing and sacking when the latter is desired by purchasers.

It is not anticipated that the operation of these seed grades will perceptibly alter the quality or value for milling purposes of the commercial grades of grain, as cars of grain for seed will be selected primarily on the basis of freedom from noxious weed seeds.—Seed Branch, Ottawa.

Co-operative Egg and Poultry Marketing.

While the activities of the Live Stock Branch of the Dominion Department of Agriculture with regard to the organization of Co-Operative Egg and Poultry Marketing Associations have been largely confined to date to the Eastern Provinces of the Dominion, the need and opportunity for work of this kind in the Western Provinces have not been overlooked.

From the fact that co-operative marketing of poultry products was something entirely new, it was thought advisable to thoroughly test out the practicability of the system before extending it to a wider area. Satisfactory results having been obtained in the east, arrangements are now being made to extend the work to the Western provinces.

The new field to be organized will receive the benefit of the experience of mem who have been associated with the co-operative work since its inception. Mr. T. A. Benson, who for the past three years has been in charge of the co-operative organization in Prince Edward Island is being transferred to the Province of Alberta to fill a position similar to that which he has held in Prince Edward Island.

Mr. J. H. Hare, who has had an extensive experience in this work, not only with the Ontario Provincial Department of Agriculture, but also during the last two years with the commercial and marketing end of the work undertaken by the Live Stock Branch, has been given general supervision of the Egg Circle work being conducted by the branch. Mr. Hare is now in the western provinces and will devote the greater part of his time for the next year to directing operations there. For the present he will confine his activieies principally to the Province of Saskatchewan.

Mr. R. J. Allen, B.S.A., has been appointed to take immediate charge of the organization of co-operative Egg and Poultry Marketing Associations in Manitoba. Mr. Allen has had an extensive experience not only in departmental work but also in the commercial field and goes to Manitoba well fitted to carry on this work effectively.

Mr. Wm. Kerr, B.S.A., who was in district representative work in Ontario for some time previous to joining the staff of the Live Stock Branch, and who has been associated with Mr. Benson in Prince Edward Island during the past summer, is now in charge of the work inthat province. Both during his college course and later, during active work in the field Mr. Kerr has made a special study of the theory and practice of the co-operative marketing of farm products. He enters the work in Prince Edward Island, therefore, well equipped to take up the problems that have developed in connection with the advanced nature of the work at that point.

HORTICULTURE.

Get Your Nursery Stock Through New Brunswick Fruit Growers' Association.

Editor Maritime Farmer:

Placing of Orders.—Arrangements have been made that orders for apple trees and other fruit stock sent in to me by members, after being approved here, will be sent to the local nurseries and filled by them in the spring.

Cost—Apple trees purchased through the Association in this manner will cost 24 cents each, the trees to be well packed and shipped, freight prepaid, to any railway station or steamship landing in the province. Plums, cherries and pears will cost about 35 cents. Orders for small fruits will be filled at prices to be determined later.

Method of Payment.—The nurserymen supplying the trees, **and not the association,** will collect payment making drafts at thirty days from date of shipment, or otherwise collecting payment in that time. Members sending in their orders must be prepared to comply with these conditions of payment.

Members Only Eligible to Procure Trees—Members only shall be eligible to procure fruit trees at reduced rates through the Association. No orders will be sent in to the local nurseries or accepted unless the person sending in the order is already a paid up member of the Association, or unless he joins the Association and accompanies the order with his membership fee of $1.00.

Nurserymen's Guarantee.—The local nurserymen state that they take the utmost precaution to have their trees true to name, but do not hold themselves responsible in this respect further than to guarantee to replace free of charge any tree or trees that do not prove to be true to name, or to refund the price paid for them. They further state that they take the most of their scions from their own trees, and when getting new varieties they endeavor to purchase their scions from parties of absolute reliability. A considerable portion of their scions are collected for them by the Horticultural Division of the Department of Agriculture, from some of the best orchards in the province. In this respect it is well to mention that I do not think any nurseries will assume any more responsibility in regard to trees not proving true to name, than the above. I understand that it is the general attitude of all nurseries on this qeustion.

Replacement of Trees at Half Price.—The nurseries with whom these orders will be placed agree to replace any apple trees procured from them that fail to grow with proper care, at half price, provided they are notified by the first of September following the delivery of the trees, and provided also that the money which represents the half price accompanies the notice.

Inspection of Nursery Stock—The stock in these nurseries has been thoroughly inspected by officials of the Horitcultural Division of the Departpartment of Agriculture, and has been found to be apparently free from San Jose Scale, and is good healthy stock.

Saving in Price.—By ordering apple trees through the Association members will be effecting a saving of six cents or more per tree and a corresponding saving on other classes of nursery stock. At the same time they will be getting local grown stock that has been inspected and which is sold under about as good a guarantee as it is possible to obtain from any nursery. It must be borne in mind that there is always some percentage of loss in nursery stock no matter where it comes from; in fact, this applies generally to the handling of living things.

Orders Should be Placed Imemdiately.—Orders should be placed immediately, and if possible within a day or two of the receipt of this letter. If this condition is complied with, almost any of the standard varieties may be obtained, but the longer the order is withheld the greater the possibility of one or more of these varieties most in demand becoming exhausted.

Write to A. G. Turney, Secretary, N. B. Fruit Growers' Association, Fredericton.

Seasonable Garden and Orchard Hints.

Diseases in the Orchard.—Once the vegetative or growing season is over, the fungi causing apple or pear scab, bitter rot, black rot and other diseases, are at rest just as much as the trees themselves. Left unattended to, the fungi will safely hibernate and be ready for another attack in the spring. Spraying is very effective, but this cannot be done in winter. On open days, there is no reason, however, why the trees should not be examined carefully and all dead limbs taken off, cankers and bark scraped and disinfected, and the trunks and main branches lime-washed. These precautions will satisfactorily assist in the prevention of destructive epidemics.

Strawberries.—In almost every part of Canada where strawberries are grown it is desirable to protect them from frost with a light covering of clean straw or grass. All the covering that is needed in most localities is sufficient to prevent the sun from shining through and thawing the soil beneath when the temperature goes a few degrees above freezing in winter or early spring, as it is the thawing and freezing of the ground which causes much injury. A heavy covering is not desirable, except on the prairies where there is little snow. The covering should not be removed until the plants begin to grow in the spring, as the longer it is left on the less danger there will be from spring frosts. On the prairies, particularly, it is well to leave the covering on as late as possible because of danger from frost. If there is danger of moulding, or if the plants become spindly before it is safe to remove the protecting material, it should be loosened to let the air through so as to dry off the tops of the strawberry plants. In places where ice is liable to lie over the plants it is a good plan to run a shallow furrow between each row in the autumn to ensure a better circulation of air.

Protection from Mice.—During some winters mice are very destructive to fruit trees, even after the latter have been planted several years. Just before winter sets in, wrap ordinary white building paper around the trunks, tying it with twine; mould up the soil a little about the base to prevent the mice entering at the bottom of the paper, and there should be no trouble from them. If this has not been done before the snow has fallen, tramp the snow well around the trees, after putting on the paper, which will prevent the mice from reaching the trunks.

Scions for Grafting.—A good time to cut scions for root-grafting is just as winter is setting in. They may be kept in good condition until wanted by burying them a few inches deep in the ground, preferably in sand, or by keeping them in forest leaves in a cool cellar.

Plans for Spring.—Most of the seed and nursery catalogues appear early in the new year, and the sooner orders for seeds and plants are sent in after the catalogues are received the better the prospects of getting what is desired.

Careful planning of the season's work during the winter months, whether with fruits, vegetables or ornamental plants, will well repay the time and thought thus given. So many things demand attention in the spring that it is not always possible at that time to give the necessary attention to planning details, and often a little forethought will mean the difference between profit and loss.—W. T. Macoun, Dominion Horticulturist.

Winter Protection of Young Apple Trees.

From Injury by Vermin

Precautions must be taken to prevent injury from mice, rabbits, etc. Many failures in apple growing here and elsewhere are caused by these pests and a large annual toll in the form of dead trees is annually exacted by them. As far as possible crops harboring and attracting such pests should be avoided and the accumulation of litter, trash, weeds, long grass, etc., which furnish suitable winter quarters for these animals, prevented. Mice work under the snow and damage from them may be prevented by tramping the snow solid round the tree after the first few snowfalls. This method of protecting is however somewhat dependant on the weather. The cheapest and safest protection is secured by wrapping the trunks cylinder fashion with paper, wood-veneer or some such material. Good strong building paper, as light as possible in color gives good satisfaction. This may be placed round the trees in the fall, not tightly, but leaving an inch or so of space between the inside of the paper and the bark or the tree. The soil should then be mounded up around the bottom of the paper to a height of six inches or so. Veneer tree protectors, made of thin material. one-eighth inch thick, 12 inches high, 12 inches wide, and costing about one cent each will last two and three years and afford good protection. The paper or veneer as the case may be should be removed in the spring, about the middle of April.

From Sunscald.

This form of damage is very common in some localities, so common, in fact, that a tree which escapes it is a rarity. The greater part of the damage occurs in late winter, or during the warm spring days when the snow is going off. During the warm afternoons the sun, reflected from the snow against the southwest side of the tree trunks, becomes very warm. The trunks are thoroughly warmed on that side. They are thawed out, and the bark becomes soft, sappy and pliable. Then, when the sun goes down and the temperature falls again to zero, the bark is again frozen tight. The next day the same thing happens, and so day after day the young bark freezes and thaws, and by this means is torn to shreds. When spring arrives the bark is killed and broken open. Then various kinds of fungi get in and the damage which begins by

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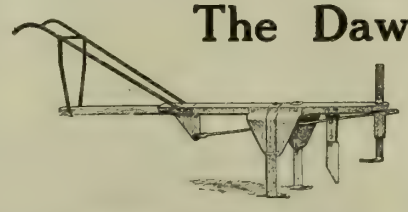

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freezing and thawing ends with spread of canker and other troubles about the trunk of the tree. The best preventives of sunscald are low heads and veneer and paper cylinder protectors. High-head trees, which are of doubtful value anywhere, are undesirable in places where sunscald is bad. The protectors of paper or wood veneer recommended above for mice and rabbits will also give practical immunity from sunscald. This trouble is a very serious one. It is not uncommon to find young orchards ruined by it. In sections where this trouble is prevalent great pains should be taken to protect young orchards from it. For the benefit of the fruit growers, the Fruit Growers' Association has secured a number of veneers and will fill orders for them at cost price. Apply to: A. G. Turney, Secretary-Treasurer, N. B. Fruit Growers' Association, Fredericton.

Fall Work in The Garden.

FALL WORK IN THE GARDEN

Traveling about the country in the late fall, after the frosts have killed all the tender plants, I have been much interested in noting the condition of the gardens. So many seem to think that no more work is necessary after the fullness of summer, except to garner the crops. The litter of vegetable crops, weeds and vines is left to be cleared up next spring when time is limited and moments are precious.

Some contend that the weeds and vines serve as a mulch and help to conserve the fertility. Be that as it may I have practiced the method of clearing away all surplus weeds and vines and placing them on a compost heap, where, with a mixture of muck and leaves, the elements are prepared to be returned to the soil next year. When any vine has ended its career of usefulness it is promptly removed. So far as possible no weeds are allowed to go to seed and in this way fewer weeds appear each year. We believe few gardeners really appreciate how much labor can be saved in this way.

My gardens are covered with a layer of stable manure from the cow barn after everything is removed and this is plowed under in the spring. Vegetables like parsnips and salsify are covered with coarse, strawy horse manure to guard against alternate freezing and thawing. Straw and litter from the stable also serve as an excellent covering for the asparagus and strawberry beds, as well as the autumn-sown spinach. In the spring all the coarse material should be raked away and will serve to build up the compost heap. This compost heap is an excellent fertilizer for sweet corn and has given good results with melons and squashes as a supplement to the manure. It is also the best obtainable material for the greenhouse plants.

In the small fruit patch all dead canes are cut away in the fall, not too closely, but no dead branches are left. If any leaves collect about the blackberry and rapsberry bushes they are allowed to remain and serve as some protection against the frost of winter. Some of the tender shrubs and rose bushes of the border are wound in straw and burlap and we are well repaid by the beautiful flowers each year.

Celery may be banked with earth and left in the rows until after quite severe frosts have occurred. The dirt is drawn up well toward the tops of the plants and a layer of straw or hay spread over the whole patch. At the proper time this is removed and the bleached product taken to the cellar or placed on the market.

One should see that pits for the hotbeds are dug and the frames properly placed in position before the ground freezes. It is something of a task to dig a pit in the winter. It is also well to put a supply of soil and compost where it can be had when needed for filling seed boxes and repotting plants during the cold weather, when the ground is covered with snow.

Free Seed Grain and Potatoes

By instructions of the Hon. Minister of Agriculture a free distribution of superior sorts of grain and potatoes will be made during the coming winter and spring to Canadian farmers. The samples will consist of spring wheat (about 5 lbs.) white oats (about 4 lbs.) barley (about 5 lbs.), and field peas (about 5 lbs.) These will be sent out from Ottawa.

A distribution of potatoes (in 3 lb. samples) will be carried on from several of the Experiment Farms, the Central Farm at Ottawa supplying only the provinces of Ontario and Quebec.

Each application must be separate and must be signed by the applicant. Only one sample of grain and one of potatoes can be sent to each farm. If both samples are asked for in the same letter only one will be sent. Applications on any kind of printed form cannot be accepted.

The destruction by fire of the cereal building at Ottawa, which contained grain-cleaning machinery and a large stock of seed grain for distribution, may make it necessary to curtail the distribution to a certain extent. We shall fill as many as possible of the applications which conform to the rules; but requests received after the end of December will probably be too late. Samples cannot be sent in response to applications (no matter when received) which fail to state clearly the needs of the applicant, his experiences in crop-raising, and the character of the soil on which he intends to sow the seed.

All applications for grain (and applications from the provinces of Ontario and Quebec for potatoes) should be addressed to the Dominion Cerealist, Central Experiment Farm, Ottawa. Such applications require no postage. If otherwise addressed, delay and disappointment may occur.

Applications for potatoes from farmers in any other provinces should be addressed (postage prepaid) to the Superintendent of the nearest branch Experimental Farm in that province.

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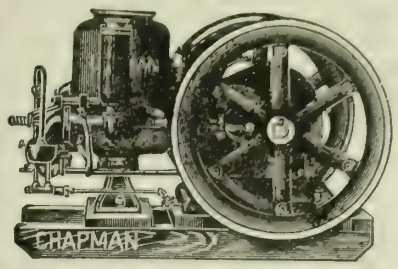

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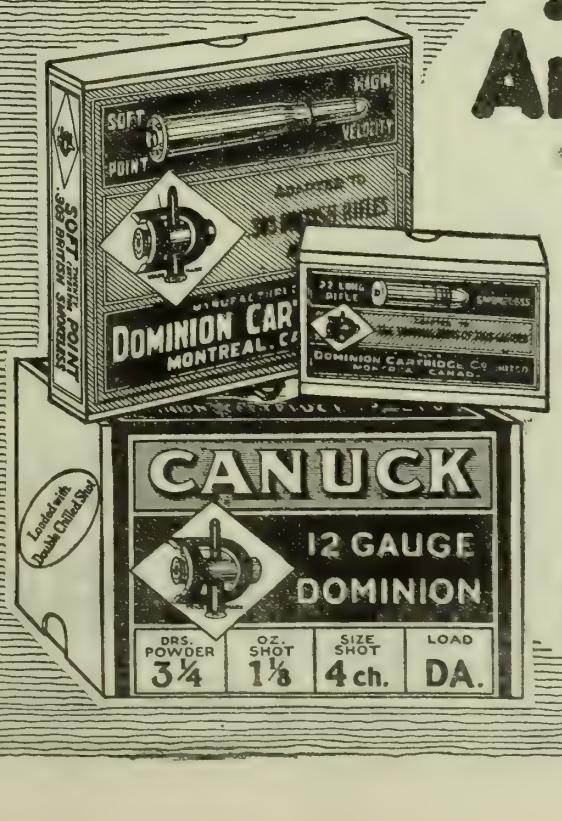

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DAIRYING.

Proper Storage of Butter Important.

Nearly every creamery during the course of a year meets conditions which are either to its advantage or which make it necessary to place butter in storage for a week or more at a time. The common custom among creameries is to use the refrigerating room as a cooler and place of storage for butter during the time between manufacture and shipment or sale. Wholesale dealers must use storage to preserve the quality of their purchase whether for a few days or until delivered to the retailer; and left in the refrigerator until it is sold and delivered to the customers. They in turn, either use an ice box or take the chance of eating rancid butter before the pound is consumed. The existing condition then is, briefly, that refrigerating devices are used for butter by manufacturers, dealers and consumers for the common purpose of preserving quality.

The difference between freshly churned butter and the same after storage, providing no foreign odor has been absorbed, is due to changes in texture, in aroma and in flavor brought about by biochemical alterations in the butter constituents. (Average fat 83.75%, water 13.03%, salt 2.09%, casein 0.64%, lactrose 0.35%, ash, 0.14 %, and a trace of acids, coloring matter, aromatic compounds, etc.) That these constituents, except water and salt are subject to alteration through the agencies of various groups of microorganisms is a well established fact and is proof that butter may be the site of many changes.

Buter fat is composed of a mixture of fats—fatty acids combined with glycerin—of which olien constitutes about 35%. The various elements, carbon, hydrogen and oxygen, of which olien is composed are so hitched together in the molecule, the smallest particle which can exist as olien, as to leave a place unsatisfied for oxygen. During storage this place is gradually fillled, changing the smooth-spreading texture of butter to a tallow consistency. Through the agency of microorganisms a part of the lower fats in butter are split during storage into fatty acids and glycerin. These fatty acids thus set free have been thought, until recent years, to be the sole cause of rancidity in butter; but at present many investigators claim that other products of degradation accompanied with the formation of acids from sugar and casein play the important part.

Water, salt and ash are not susceptible to deleterious alterations under the conditions existing in storage butter. A little of the salt and water is lost by leakage and a little water by evaporation. Salt plays the part of inhibiting changes which otherwise would occur; while moisture above 15% encourages both the work of microorganisms and chemical activities.

The alteration in the small amount of casein present in butter which occur during storage are gradual changes from an insoluble casein into cleavage products soluble in salt solution and in water. If this degradation of casein follows the lines of digestion, as would be the case when certain groups of microorganisms are responsible for exciting the changes, no great harm is done outside of impairing the flavor; but if the nature of this change is putrefactive, as certain groups of microorganisms commonly found in milk would excite, the trouble at once becomes serious. There would be formed ill-smelling and foul-tasting compounds resembling spoiled eggs, decayed animal tissue and putrid milk, a trace of which would render a whole tub of butter unpalatable.

The per cent of lactose present in fresh butter whether it is made from pasteurized or from unpasteurized cream is very much the same; representative of the amount of milk serum remaining in the butter. About 7% of the total amount of lactose present in fresh butter is used up during the first ten days and another 7% during a year in storage. The sugar is transformed into acid and flavoring compounds, a change which for the first two weeks is looked upon as a temporary improvement and not as a deterioration.

During the storage of butter the coloring compounds both natural and artificial are reduced to lighter shades, a fading which corresponds more or less closely to the deterioration in quality. Vegetable colors fade rapidly under the influence of light. It also is well known that microorganisms through their biochemical activities are capable of destroying coloring matter, a property which is made use of to an increasing extent in the bleaching of fabrics. While the fading in the color of butter is not indicative of degeneration in quality, yet it does indicate that forces are at play and that these forces may cause decidedly detrimental changes.

The total number of living microorganisms in fresh butter under the deleterious influence of metabolic products, low temperature and salt die off rapidly at first then more gradually until after nine months of storage less than one per cent are alive. That is, there are then about 20,000,000 dead cells per gram of butter or about one gram of dead microorganisms in a 60 lb. tub of butter. The changes excited by microorganisms does not necessarily cease with death; in fact the dead starter bacteria which while alive are considered highly beneficial may after death become exciters of deleterious changes, not as a dead mouse in the well but through the biochemical activities of enzymes liberated after death from the broken down cells. The changes excited by certain groups of microorganisms in butter afe nothing else but detrimental as during their metabolic processes casein is broken up into various compounds, many of which are highly objectionable.

After discussing briefly the changes which occur in the constituents, fat, casein, sugar and coloring matter there remains last but not least in importance the flavoring compounds. The quality of the butter as estimated by the consumer is based largely upon flavor. The buttermaker seeks through the use of a starter to develop in his ripening cream aromatic products which extended to his butter will characterize it as a product of high quality. Flavors and aroma in butter, previously indirectly referred to as products produced from milk sugar and protein by the biochemical activities of microorganisms, are so delicately balanced that the slightest change is sufficient according to the scoring of the judge to lower the score several points and to stamp the butter as a lower grade. These compounds are believed to be ethereal salts, the bases of which are ethyl and butyl ethers combined with lactic, acetic and butyric acids. Through the action of specific organisms any of these compounds may be produced from milk sugar, and less easily from casein. Changes in flavor are gradually being wrought in ripening cream and if a cream is churned while under-ripe these desirable compounds continue to be developed in the butter for several days, thus making it possible for the same judge to sincerely score the same butter after a week's time than when the butter was first placed in the tub. Other aromatic compounds of complex nature are formed during storage and it is to these that the judge applies various descriptive terms. The most common is the so-called "storage flavor" which appears only in old butter, although in this sense butter may become old within two or three weeks. The kind of flavor which develops in the butter is determined almost entirely before the butter is placed in the tub. The flavor of the butter-milk will give a very good indication as to the quality of the butter and also whether that butter will stand up well in storage. The statement of L. A. Rogers, "There is almost always a complication of flavors and probably some sort of sequence of flavors, that is to say, one

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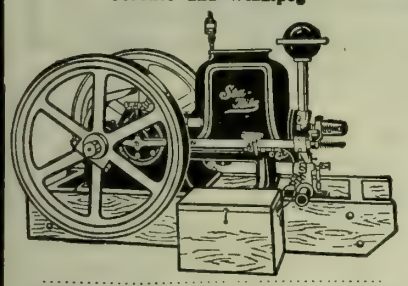

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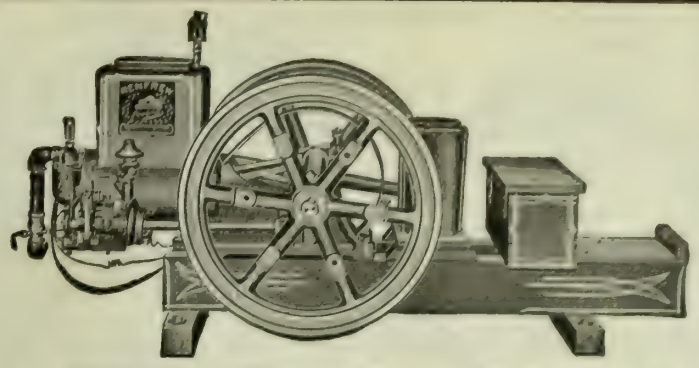
flavor may develop into another, and this in the course of time into a third. The temperature of the storage doubtless retards this transition, and the holding of the butter for some time at one stage makes certain flavors evident." The rapidity with which these changes proceed, or in other words, the stability of the product, is governed largely by the biochemical changes causes by microorganisms in the cream during ripening and the subsequent changes resulting from this activity.

Of the many factors influencing the changes, both the nature and the rate at which they take place, the three most important are the amount of salt, the temperature of the storage and the condition of the cream when churned. Unsalted butter is known not to hold up in storage as well as salted butter, and, too, the results of a number of experiments indicate that a butter heavily salted (3½ to 4%) will not be of equal quality when removed from storage as another sample of the same butter with less salt; that is, the presence of 2½ to 1% salt is favorable for storage butter. Chemical and biochemical changes proceed more rapidly as the temperature rises; and the alteration in butter constituents during storage follows the same general laws as have been experienced repeatedly when samples of the same butter are stored at different temperatures. The lower the storage temperature, until all parts of the butter have been congealed, the slower will alterations occur and from then on the changes are almost negative. A temperature near 0°F. has been proved by numerous experiments to give best results. The stability and keeping quality of butter is to a large extent determined by the condition of the cream from which the butter is made. A cream in which the starter type of bacteria is unable to make further growth is overripe and the butter manufactured therefrom is subject to rapid changes. For great stability of product overripe cream and over-ripe starter are at all times to be avoided. By overripe we mean a condition when the acidity of cream or starter has increased through the activity of the starter type of bacteria to an amount, representing the maximum toleration, which prevents further growth and which inactivates and kills many of the starter bacteria. This condition is reached when the acidity of milk roses above 0.70% (lactic acid determined by "Mann's" method), of 20% cream above 0.56%, of 27 % cream above 0.51%, and of a 34% cream above 0.45%. Then a ripe condition exists when milk (starter) is between the point of loppering and 0.70% acid and when a 30% cream is between 0.39% and 0.49%. Where gathered cream, ripe or even over-ripe when it is received, constitutes the raw material, it is unwise to try to ripen further; but what may be done to a good advantage is pasteurization to kill a large percentage of the bacteria present and to eliminate much of the various odors. Cool, then add 10% or more of good starter (a strain of acid bacteria selected from many because of its desirable qualities), a little under-ripe and hold at low temperature for a short time or until you are ready to churn. The under-lying principles are these: First, that the starter bacteria in cream, providing the acid fermentation of a sweet cream (not a pasteurized sour cream) is controlled by starter, are most active and in greatest numbers when the cream is ripe (a 25% cream with acidity between 0.42% and 0.52%), exerting at this time the greatest inhibitive influence which they possess over other types of bacteria; second, that the fresh, rich, desirable flavors and aromas reach their maximum at the time of greatest bacterial activity; third, that a large number of dead organisms (those killed by pasteurization are not so detrimental as heat destroys with the cell the contained enzymes which are responsible for many of the changes) in the cream together with high acidity renders the butter unstable and subject to early deterioration. —By Chas. W. Brown, East Lansing, Mich., given before the Michigan Dairymen's Convention.



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Feeding the Dairy Cow for Best Profits.

I am aware that farmers, as a rule, are not in the dairy business simply for the sake of their health. The cow requires certain specific food substances for certain specific purposes. We may liken the animal body to a machine which, like the steam or gasoline engine, moves itself and may supply power to move other machines. Such an engine requires two things for its operation: First, sufficient repair material to keep its working parts in order; second, a supply of fuel in proportion to the work to be done. These two things—repair material and fuel, likewise constitute the requirements of the animal body.

The machinery of the body is composed of water, ash and protein. These, then, are the materials which must be supplied to keep it in repair. The first of these is found abundantly in nature, so that we need not concern ourselves therewith save to call attention to its importance and to the necessity of supplying it in abundance The animal's body is nearly three-fourths water, while milk is 87% water. This means that unless the water supply is abundant it is impossible for the cow long to continue at a maximum production of milk.

Ash (mineral matter) is especially valuable for growing animals since it is the substance out of which the bony framework is largely composed. Ash, however, is supplied in sufficient quantities in all normally constituted rations. Hence, like water, it may be dismissed from further consideration.

Protein is the most important nutrient used for repair material. It is the substance out of which the flesh skin, vital organs, brain, nerves and the other machinery of the body are largely formed. Since the body machinery is running constantly, whether any work is being done or not, the loss of protein is constantly going on, and must constantly be renewed. Protein as well as ash is needed by growing or pregnant animals to enlarge the working machinery of the body itself or that of the fetus. Moreover, the body cannot manufacture protein for repair purposes out of carbohydrates and fats any more than a machine can manufacture its repairs out of fuel. The body must absolutely depend upon the protein in the food for repair material. Carbohydrates and fat are used in the animal body as fuel to furnish energy to run the animal ma-

(Continued on page 100.)

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LIVE STOCK.

Checking Stomach Worms in Sheep.

The infestation of the stomach worm can be held in check by drenching, and there are a number of proprietary remedies (salts, powders, and liquids), which many evidently believe help in keeping the worms under control. Of the drenches gasoline is the one most commonly used by flock owners in the United States (writes W. C. Coffey, Illinois Experiment Station, in the "Breeders' Gazette"). It should be given on three succsesive mornings after the animals have been kept away from all feed and drink for sixteen hours, and after the dose is given, they should be fasted for two or three hours more. Each dose should be measured separately and given in milk, linseed oil, or flax-seed tea. Whole sweet milk, about 5 oz. with each dose for both sheep and lambs, is the medium most frequently employed. One-fourth of an ounce of gasoline for lambs and half an ounce for sheep are the sizes of doses most frequently advised. The writer, however, after considerable experience, has adopted larger doses because they seem more effective. Lambs at weaning-time are given ¼ oz. on the first morning, ½ oz., (one tablespoonful) on the second, and ¾ oz. on the third. Sheep are given ½ ounce, ¾ oz., and 1 o . respectively on succeeding mornings. Just before drenching the gasoline and milk or other medium should be shaken vigorously, in order to have the gasoline mixed with the medium while the drench is being swallowed. It is said that gasoline should never be given with water.

Administering a Drench.

The animal should be allowed to stand while being drenched, as it is less likely to become strangled. It should be backed into a corner or against a wall, and the one giving the drench should stand astride it in order to keep it from twisting about. The nose should be lifted no higher than necessary to get the dose down, for the higher it is lifted the greater the probability of causing strangling. If the drench is given from a bottle, it should have a long, slim neck, which should be inserted at the corner of the mouth. In order not to give the dose too fast ,the bottle containing it should be tipped gently up and down while the drench is being swallowed.

A metal syringe, with a nozzle about 3 in. long and a barrel large enough to hold one dose—that is, milk and gasoline—is a useful instrument for drenching, although the work proceeds a little slower than with a bottle. By placing the dose in a glass graduate, such as druggists commonly use, the gasoline and milk can be thoroughly churned together by working the piston of the syringe. Then, too, when drenching the pressure from the piston forces the liquid so far down the throat that the sheep or lamb does not seem to notice the gasoline. This is an important point, for if the animal is not excited and struggling when the dose is being swallowed it goes directly to the fourth stomach where the worms live; otherwise it is likely to go into the first stomach or paunch, where it will do practically no good.

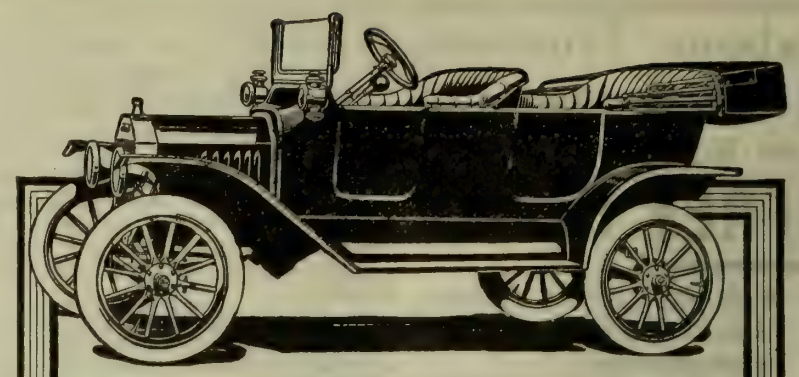
Other drenches are coal tar creosote and bluestone, or copper sulphate. Coal tar creosote solution is made by shaking together 1 oz. of coal tar creosote and 99 oz. of water. The doses of this 1 per cent. mixture, recommended by Stiles, are as follows:—Lambs, four to twelve months old, 2 oz. to 4 oz.; sheep, 3 oz. to 5 oz. Coal tar creosote, so-called, seems considerably to vary in composition, and this has been a serious objection to it. The copper sulphate solution is prepared by dissolving 1 lb. avoirdupois of pure copper sulphate crystals powdered fine in 9½ U.S. gallons of warm water. It is better to dissolve the crystals in a gallon of boiling water, and then add cold water and mix thoroughly. The dose for a three-month-old lamb is ¾ oz.; for a six-month-old lamb, 1¾ oz.; a yearling, 2½ oz. to 3 oz.; old sheep, 3½ oz. As with gasoline, the animals should be deprived of all feed and water prior to the drenching, if either coal tar creosote or copper sulphate is given, and those treated with the latter should not have water from twelve to twenty-four hours after dosing. But, unlike gasoline, neither of these remedies has to be given on three successive days.

Raising Lambs Free From Stomach Worms.

There is one way in which it is possible to raise lambs so that they will be practically free from stomach worms, even though their dams are badly infested. That way is to raise them in a dry lot—a lot in which no plant is to be found growing. Such lambs have all the manifestations of health, and postmortems show them to be almost free from infestation. Out of a number of stomachs examined, twenty-two was the largest number of worms found by the writer in any individual, and this animal had a wool ball in its stomach. In case of purebred flocks becoming heavily infested, it may be advisable to raise a crop of lambs in a dry lot as in so doing clean, vigorous breeding animals can be secured. Then, too, other undesirable internal parasites may be avoided at the same time.

It is timely to say that the sheep is host to other harmful internal parasites besides the stomach worm. Most animals, man included, are the abodes of many families of nematodes. For instance, there is the nodule disease in sheep caused by a worm (Olsophagastoma columbianum) that causes greenish concretions to form on the intestine. This is a common disease, which impairs the intestinal digesti n. It is so common in the corn belt, in fact, that local butchers have supposed it is natural for sheep to have knotty intestines. But the point we are driving at is that we should not lay all of the sheep's troubles with internal parasites to the door of the stomach worm. And as a rule the stomach worm gets in its most deadly work when it acts in conjuction with some other nematode parasite.

This summer threatens to be a propitious season for stomach worms, because there is an abundance of moisture. That little ensheathed larvae will have easy swimming up the grass stems and blades; so, beware. Shift the flock as much as possible, give it forage crops, and feed it well, for in so doing one better prepares the animals to resist attack. Get rid of the lambs intended for market as soon as they are ready if the price is not bad; drench at least twice, and perhaps three times. Let nobody assume that his sheep do not have stomach worms, for such an assumption is dangerous, and it is characteristic of the man "asleep at the switch."



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Seasonable Live Stock Hints.

Feeds.—Feed the live stock carefully; the spring pasture is a long way off. Plan to give the pasture a good chance next year by conserving a reserve of roughage for spring feeding.

Laxative feed and exercise are the secrets of successful feeding. Should ensilage or roots be short, molasses makes a very good supplement when fed at from two to four pounds per head per day.

Cut-feed means less waste and greater palatability. Cut straw mixed with the ensilage ,or hay that would otherwise be wasted, cut and mixed with the ensilage and roots is a great saving to the feeder, yet a mixture which is very acceptable to the stock.

Good rations for any class of live stock must be well balanced as to variety and palatability, succulence and nutrition. No two animals respond the same to any one food-stuff; a study of the feeding of individuals is most essential and most remunerative.

Totally Discouraged by Nervous Prostration

After Many Weeks of Doctoring a Friend Recommended Dr. Chase's Neve Food, and She Was Cured.

There is nothing more discouraging than Nervous Prostration. Because of the exhausted condition of the nervous system, weakness and helplessness take possession of the body. The faculties of the mind as well as those of the body are affected and hope and courage disappear.

The patient, often appearing well, gets little sympathy, and few doctors understand diseases of the nerves well enough to treat nervous prostration intelligently. Dr. Chase's Nerve Food is founded on the prescription of a great nerve specialist, and hence its wonderful success in curing ailments of this nature.

Mrs. Edith May Williams, Tillsonburg, Ont., R. R. 3, writes: "I cannot speak too highly of Dr Chase's Nerve Food. I suffered for years with my nerves, and at one time I was confined to my bed with nervous prostration for several weeks. I cannot just explain my feelings, but I was weak and helpless and so discouraged and despondent that I thought I would lose my mind. I doctored with several doctors and received but little benefit. At last I became very much discouraged and thought I would never get better. A friend advised me to try Dr. Chase's Nerve Food, and before I had finished the first box, I knew that it was helping me. It took several boxes of the Nerve Food to make me well and I can truly say that it is a wonderful builder-up of the nervous system."

It is only wise to prevent such dreaded diseases as Nervous Prostration, Paralysis and Locomotor Ataxia by keeping the nervous system in good condition at all times. When you cannot sleep well, have headaches and indigestion, be warned of approaching dangers and restore the nervous system by using Dr. Chase's Nerve Food. 50 cents a box, all dealers or Edmanson, Bates & Company, Limited, Toronto.

Careful, co-operative buying of the necessary mill feeds is profitable, and will lead to healthy co-operation in all live stock operations in any neighborhood.

Make, and keep, at least this one New Year's resolution, namely: to **make every pound of feed more profitable by better feeding methods.**

Beef Cattle.—Don't winter scrub cattle; finish them off now and lose as little money as possible.

Prices warrant raising all the good beef calves.

Why lose money in rearing three- and four-year-old steers when baby beeves and well finished two-year-olds are commanding the top prices Finish beef early and thoroughly.

Winter well the calves and yearlings. Don't lose gains from last summer's pasture, but keep the young stock growing and thrifty; succulent feed is essential for this purpose.

Good beef bulls are scarce; use and keep only the best.

Sheep—Keep more sheep and fewer dogs.

Separate the lambs from the mature sheep and keep them growing by feeding good hay, turnips, and a limited grain ration.

Good preparation of ewes for lambing is as essential as preparing a dairy cow for her lactation period. Don't get the ewes too fat.

The yeaning ewe requires a warm pen; but the remainder of the flock is better in an open-front shed or shelter.

Winter Feeding of Pregnant Ewes.—An excellent ration is composed of clover hay, two or three pounds, and roots, two to three pounds per days. This is sufficient except when ewes are thin, in which case a meal mixture also should be fed at the rate of about a half pound per day. A good meal mixture consists of oats, two parts; bran, one part and linseed oil cake or peas, one part. Ewes lambing in February, March or April should be well prepared with the use of the above ration.

The most economical use of roughages is the secret of successful sheep feeding. If good clover hay is absent, the cheaper roughages must be supplemented with grain. Pea straw, unthreshed, is an excellent substitute for clover hay; pea straw, threshed, must be supplemented with grain. Fine grass hays may require an addition of some coarse grain in order to take the place of clover hay. It would be better to feed coarse grass hays to some other class of stock.

Ensilage may take the place of roots to within a month of lambing, at which time ensilage should be stopped and roots gradually decreased until after lambing.

For feeding sheep, the roots may be either mangels, turnips, or sugar beets, except in the case of rams, where turnips only should compose the root-ration.

Winter Feeding of Lambs—A good ration consists of a mixture of equal parts ensilage and roots, two to three pounds; clover or mixed hay, two to three pounds; and a grain mixture starting at half a pound and finishing at one and a half pounds per day. A good grain mixture for this purpose consists of oats and bran, two parts each; linseed oil cake, one part, to which may be added toward the end of the fattening period two parts of corn.

Swine—The feeding pig not making rapid gains is being fed at a loss. Exercise and succulent feed are as essential to breeding pigs as to any other class of stock. Prepare the sow for the farrowing period. Fine clover hay and whole or pulped roots may be fed advanteously to mature sows and boars.

A warm pen is necessary for the farrowing sow, but a single-board, low-roofed cabin is ample shelter for all other mature pigs.

Good breeding boars are scarce; keep and breed only the best.

Farm Buildings.—Keep the dampness out of the barns. A ventilating system means both a good fresh-air intake and a good foul-air outlet; either of these missing means poor ventilation. Fresh air is essential to all live stock; draughts and dampness in the stables are dangerous and unhealthy.

The comfortable modern stable is not necessarily extravagant, but insures healthy stock, greatest satisfaction and maximum profits to the owner.

The Animal Husbandry Division may be able to assist you with building plans free.—E. S. Archibald, Dominion Animal Husbandman.

The Ram as a Flock Improver.

There is unfortunately less attention paid to the pedigrees of sheep than to those of any other class of stock. Fine-wool breeders cannot be criticised so much as breeders of mutton sheep. Some benefit has been derived from the lack of interest in pedigrees. This has stimulated among some breeders a more rigid and careful selection of the character of the rams used to head their flocks. A poor individual cannot be carried through the sale ring on the reputation made by its grandsires.

It is not the thought to minimize in any way the value of a good pedigree. The careful selection practised by the sheep breeder has led to the building of a reputation for his flock as a whole rather than a particular individual . Thus we hear Shropshire breeders talk of Mitnon, Buttar or Bibby rams instead of Minton's Best and the like. However, it makes little difference how we improve a flock, so long as we accomplish permanent improvement.

Farmers in the cornbelt who keep flocks of grade ewes depend upon the larger breeder to maintain and advance the quality of the flocks. No matter how high-class a flock the pure-bred breeder may develop, he can not improve the quality of sheep in general unless the producers of mutton and wool u > improved rams at prices that will give breeders fair profits.

The farmer with a grade flock does not usually give it much thought until the breeding season is at hand. Then he is busy with the fall plowing and planting, and he is tempted to buy a ram in the quickest and easiest possible way. He may call one of his neighbors and find that he has a likely ram lamb. Probably this lamb was too small and thin to send to the market with its brothers and sisters. Yes, he could be bought very cheap; most discards are cheap.

The Missouri Experiment Station bred a lot of 18 western ewes to a scrub ram, and another lot of 18 ewes to a medium-priced ($30) purebred ram. Both lots of ewes were as uniform as to size, condition, age and quality as it was possible to select them. The ewes and lambs of both lots were treated alike throughout the experiment. On July 7 the lambs were sold at East St. Louis. The lambs sired by the purebred ram at the same age averaged 9.4 pounds per head heavier and sold for $2.85 more per 100 pounds than the lambs sired by the scrub ram There was a difference of $2.12 per head in favor of the lambs sired by the pure-bred ram.

The ewes in this experiment were bred the following year to a Hampshire ram and the ewe lambs were kept in the college flock. These first-cross Hampshire ewes at the age of two years averaged 190 pounds in weight, which was 85 to 90 pounds more than their mothers. The mutton conformation was much superior to their mothers. These ewes had dark mottled faces and ears. The ears were large and shaped like those of the sire. The fleece graded ⅜ and ½ blood combing. The average weight of the fleece was 11½ pounds, which was nearly as much as the combined weight of both the sire and the dam. These first-cross Hampshire ewes were bred again to an unrelated Hampshire ram to drop lambs at the age of two years. The lambs resulting from this cross would pass for purebreds with the exception of the mottled ears found on most of them.

In selecting a ram, keep in mind that the ultimate object of raising sheep is the production of mutton and wool. Different conditions make necessary different types of sheep, so that no one breed or type will fit all conditions. East of the Missouri River the grade flock in the main is bred to a mutton type ram. One likes to see a mutton ram with a strong, broad nose, bold front and a short, strong neck. These masculine characteristics indicate prepotency; that is, the ability to stamp his characteristics on his offspring. A clear skin indicates a vigorous and healthy condition. Excessive fat is not advantageous; frequently it is a detriment. A medium condition of fat is most desired.

The fleece deserves more attention than hs been given it. If one can increase the shearing quality of his flock 5 per cent without injuring the mutton qualities that much is gained. A good shearing fleece should be dense, of good length, and have a soft, elastic feel, indicating a healthy condition. A dead, harsh, dry-feeling fleece should be avoided

The use of a good sire is one of the recognized principles of improving live stock. This principle is fundamental. However, some breeders, through neglect or a lack of knowledge and interest in improved types, use sires which retard the general quality of their flocks and herds. A good, strong yearling ram should be able to serve 50 ewes. A good ram when used on a flock of grade ewes is in many cases more than half the flock, because he will usually have greater ability to stamp his character on the offspring than will the ewes. So with a small flock of grade ewes, worth from $8 to $10 per head, one can afford to purchase a good mutton ram. As the value of the ewe flock increases one can afford a higher-class ram It is economy to have a ram of superior character at the head of the flock.—Howard Hackedorn, University of Missouri, in Breeders' Gazette.

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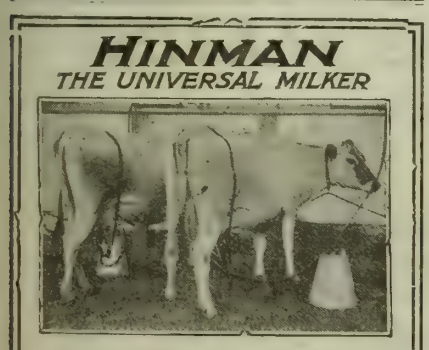
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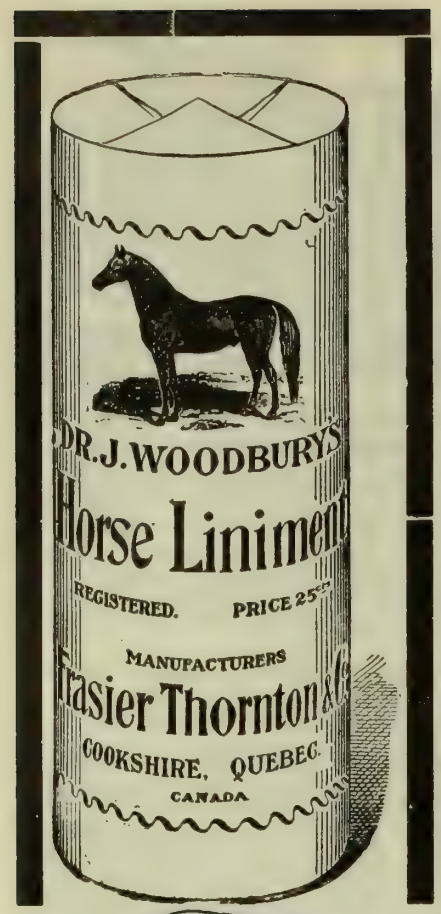
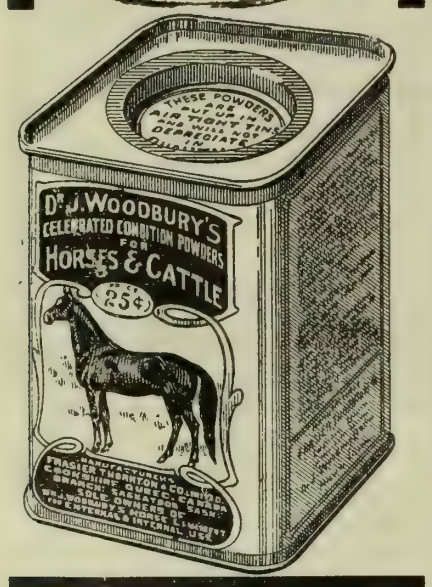




THE HORSE

Looking for Defects in Horses.

With a display of keen pride a breeder trotted out what he considered an extraordinarily good two-year-old draught filly. He asked the visitor's candid opinion of her, and expressed amazement at the answer. The disinterested party remarked that if she stood 16 hands instead of 15, and weighed 1,600 lb. instead of 1,300, and had larger bone, and did not have a spavin on her right hock, she would be quite a promising filly. Various excuses were given for her stunted growth with the stereotyped remark that she would grow three years yet and would catch up. The bad hock had not been noticed by the owner and he could not account for it. He pointed out the good big mare which produced this filly and named the stallion which was the sire. Again he was amazed when told that the stallion was not worth half as much as the mare, and was so coarse in his hocks that unsound offspring should naturally be expected. He had not noticed these defects. He bred his big mare to the undersized and inferior stallion because he was near by, and was greatly praised by the owner. Goating over the good points of the filly he had been blind to her defects. Needless to say, that man is not a successful breeder, and never will be. He is too old to start anew and form the necessary habit of critical examination of his own stock. Their merits enchant him; their faults are unseen. He will always be thinking he has splendid horses, and is likely to become offended at others who do not appreciate them so highly.

This man is not alone in his error. The disappointed owners of tail-end stock in all our show-rings are numerous, and most of them complain bitterly of biased judgment, if not unfair discrimination. The successful breeders know better than anyone else the faults of their own animals. That is their persistent and particular study. They know well enough about where their horses should be placed in the show-ring and about what they should bring when sold. From earliest experiences they have made a study of the defects in horses, particularly their own, and that has enabled them to eliminate inferior stock from their farms. Young breeders may take a useful hint from these facts. The temptation is to glory blindly in the merits discovered, and that helps to keep up courage during early disappointments. But resolute search for defects must be made if one is to weed them out. And only by rigid cutting from the very first can one hope in the span of one short lifetime to secure even a fairly uniform measure of merit in the horses ne breeds.—"Breeders' Gazette."

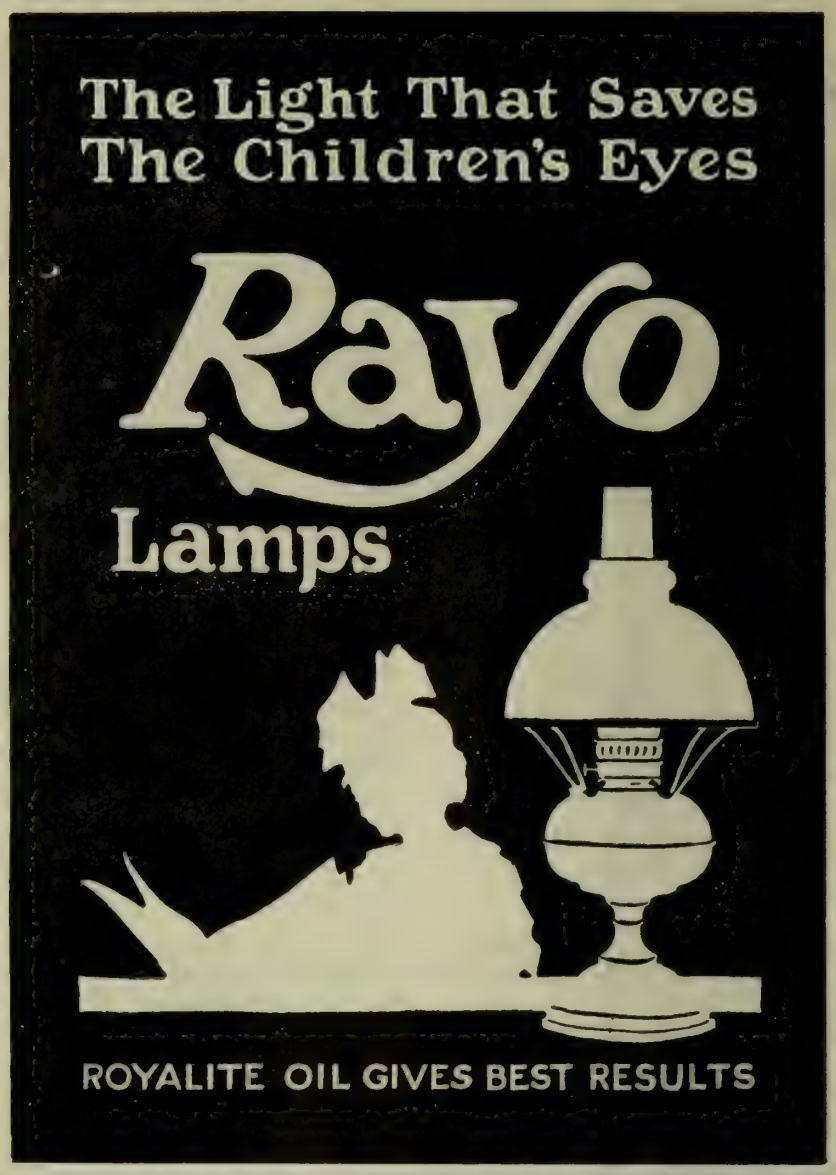
The Rearing Horse.

Rearing is one of the worst forms of vices to which a horse used for saddle purposes can be addicted, it being not only very troublesome, but also highly dangerous to the rider, since there is always the risk of the animal over-balancing himself and falling backwards. Fortunately, the vice is not of very frequent occurrence, but it may be rather easily developed in a young unmade horse through bad breaking or poor horsemanship, which two things are generally the causes to which the vice is due. Once it is firmly established, it is most difficult and more often than not impossible to break the horse of it again; hence, when a young horse is found to be at all inclined to rear, the greatest care should be taken to avoid all occasion of encouraging it to indulge in its rearing propensities by improper methods of management or by the use of too sharp a bit. The young animal must be very carefully handled, and, above all, lightly bitted while it is being broken in and until it has acquired the good manners which a properly-broken saddle-horse should possess. The vice of rearing, when it does occur, is met with practically only in geldings; mares are not given to rearing excepting in very rare instances. Stallions, of course, very commonly possess great rearing propensities, but we are not speaking of them here, as they are not used for riding purposes. In dealing with a horse that is addicted to rearing, the use of a standing martingale is to be recommended. This must be fairly short, and may be buckled either to the nose-band—if one is used—or to the rings of the snaffle (or of the bridoon when a double bridle is used.) By the use of this kind of martingale, the horse's head is kept down, and that to a large extent prevents the animal from rearing, since, in order to rear, it is necessary for the horse to extend its neck and get up its head. When recourse is had to a standing martingale, this must not at first be made too short, but should be put on rather long, as, when a horse is not used to wearing one, considerable trouble may easily ensue if the martingale is made very short to begin with. When the horse has got used to wearing this piece of gear it can be shortened to the required extent. A running martingale—which is the kind generally used—is not nearly so efficacious in preventing rearing as a standing one, but if used very short, it is of some help in checking the habit.

The Gunner Type of Horse.

We need a new breed of horses—a breed of the type of horse that is in most demand as a gunner at the present time. While there are many horses that approach this type, most of them are geratly lacking in quality and uniformity. There will likely continue to be a strong demand for horses of this type after the war, as they are the best type for the southern farmer. One or two of them are needed by every farmer in the United States except those few farmers who are surrounded by hard roads. The farmer who owns an automobile needs them to haul his buggy when the roads are muddy, and the farmer who cannot afford an automobile, needs them, as the heavy drafter is no more adapted for hauling a biggy than is a heavy motor truck for pleasure touring. On the other hand, a 1,200 or 1,300-pound horse of this type can do his share of all ordinary farm work except ploughing and heavy hauling, and can also do a considerable amount of this if necessary.

I am one of the large number of farmers who cannot afford either an automobile or a horse exclusively for driving purposes. I have owned two standard-bred horses with considerable speed and found them very



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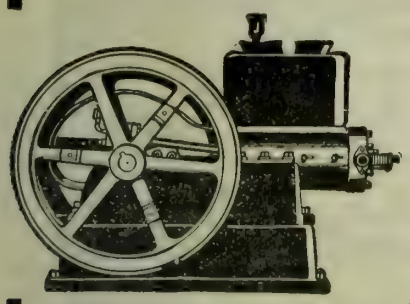

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unsatisfactory in the mud. Since then I have owned two horses of the gunner type; they have been able to do their full share of the work on an 80 acre farm, and one of them can haul an enclosed storm buggy through the mud with ease. This is almost impossible for a light trotter, and a draught horse hitched to a single buggy is a joke. One of these horses is in France, and a war horse buyer is after the other one, but will not likely get her, as it is now almost impossible to buy good horses of this type in this locality.

As the automobile has replaced the trotter, so are the tractor and motor truck replacing the heavy draughter. The last to go will be the mule, the horse of the gunner type, and the saddle horse."—Breeders' Gazette.

Grease Heel is Often Caused by Over Feeding Horse.

These diseases are practically identical and might be prevented in a majority of instances. A bad smelling discharge from cracks and sores of the skin between the heels and fetlock joint characterizes "grease heel" and a similar discharge, associated with a growth of few or many grape-like tumors from the skin of the fetlock and the leg above that joint, is the indication of true "grease." The affected leg becomes swollen or "stocked" and lameness may be present as the result of crackling of the skin. The grape formation, and grease, commonly affect horses of heavy draft breed and more particularly those that have long hair (feather") upon their legs. The disease is an indication of coarseness, sluggishness and phlegmatic temepra-ment. Tendency to the disease is hereditary. Grease heel may affect a horse of comparatively light weight and then is not os often a constitutional disorder. While the tendency may be hereditary there is no need of it materializing into an actuality, if proper precautions are taken. It is a common error to blame the breed when a Shire or Clydesdale becomes afflicted with grease. It also is an error to say that the disease never attacks a Percheron, French Draft, Belgian or Suffolk stallion. We have seen cases in these breeds, as well as in the English and Scotch draft breeds; but in all the man more than the breed of the horse, is to blame.

Grease commonly results from overfeeding, lack of exercise and lack of grooming, together with lack of sanitation in the stable. The heavy draft horse is stuffed with rich food, often including boiled mashes and steamed feed which are quite unnatural and unnecessary and often injurious to a horse. Instead of being worked daily, or at least worked abundantly every day, the horse is kept confined in a box stall, or ordinary stall, and too often the stall is in a dark, hot, dirty, badly ventilated stable. Under these conditions the horse becomes unhealthy, the excretory organs are overtaxed and fail to act properly, poisonous matters are retained, the skin becomes foul, lack of circulation induces stocking (filling) of the extremities, the skin becomes itchy and the horse rubs, stamps and bites. Washing is resorted to by the groom and he neglects to perfectly dry the skin. This aggravates "scratches" and helps to induce grease and grease heel. At the first sign of the disease, stopping the rich feed, working the horse daily and grooming him perfectly might ward off the attack, but such treatment rarely is given and drugs are the resort of the owner or attendant.

The hairy legged draft stallion, like the ordinary horse, should either work hard for his living every day, or be made to take abundant exercise every day. His stable should be light, clean and perfectly ventilated. He should have no boiled, or condimental, stimulating feed. His skin should be kept clean and his extretory organs active.

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If leg washing is done it should always be followed with a brisk rubbing with sawdust to perfectly dry the skin. No drugs, condition powders, or stimulating feeds should be given. Feed the stallion white oats, roots and a little clean oat straw or bright corn fodder, according to the season of the year. So fed, exercised and groomed grease heel and grease will rarely if ever occur.—A. S. Alexander, M.D.C.

An Equine Prohibitionist.

A year ago an owner and groom were hitching a kindly disposed trotter for his race when the blare of a brass band marching by made him take a step or two. A helpful individual, slightly intoxicated. took him by the bit, when with ears back, teeth bared and eyes blazing the trotter downed the unfortunate and but for prompt assistance would have seriously injured or possibly killed the prostrate man. The horse was a recent acquisition and had shown no temper before with his new owner and groom, so the cause of the sudden rage was a subject of anxious thought which had a speedy solution when the next man saturated with alcohol came near him. Then it became the somewhat strenuous job of owner and caretaker to keep the drunken men out of his reach in order to save their lives.

After a winter and stud season on a farm where no one used liquor, the same owner and groom were hooking the horse after his first ride of the year on the cars. A third person, apparently sober, stepped to his head, but quickly got out of reach of the horse's sudden rage. The unmistakable odor of liquor explained the situation and brought to mind the fact that the memory of a horse is his most perfect attribute. The horse had been owned by a saloon-keeper whose great anxiety to dispose of him had been so apparent as to create suspicious, but never of the true cause. Little children play with and pet the horse. Dogs, chickens, cats, all animate things, are safe in his stall, if free from the odor of liquor.

Way of Curing a Halter Breaker.

I have cured halter-breaking from the bronco to the pure-bred stallion. As yet I have failed with none.

My method of halter-breaking is simple. I tie the horse by the neck with a rope which he can not break. The other end of the rope is tied to something that the horse can not move. A bow-line knot is used. It will not slip and choke the horse, and one can untie it as quickly as he can put on a leather halter. This knot can be untied in wet or dry weather, no matter how hard or long the horse has pulled on the rope. If the horse throws himself the rope can be easily cut. This is much safer than using a chain.

One week effects the cure. On the second day the top of the neck is a little sore, if the horse is a bad one, and the little soreness reminds him of the fact that he did not break loose the last time.

POULTRY

Seasonable Poultry Hints.

November.—Early in October the pullets should have been housed in their winter quarters, but if this has not been done do not delay any longer; have all the houses ready and the layers into them as soon as possible now. Make repairs, put glass and cotton in the openings and have everything ready for the pullets to go right ahead. Arrange the house so that the pullets may be divided from the hens.

All surplus cockerels should be disposed of by this time, as well as pullets which are not likely to be fit for laying or breeding purposes, and, of course, all old hens which are not suited for breeding next spring.

Select the pullets very carefully; do not retain for winter laying any but the very best. Market all pullets which are lacking in vigor, are undersized or deformed in any way, and keep only those from which good production can be expected.

Do not move the pullets from house to house or even from pen to pen, at this time of the year; they are very sensitive and the least excitement will mean a loss of dollars by a decreased egg yield. Never allow them to be chased, and particularly do not allow the dog to amuse himself with them.

Adopt system in feeding; have a supply-bin in each pen and in this put a bag or two of mixed grain as required. The mixture may consist of almost any good sized grain raised on the farm. A good combination is wheat two parts, corn one part, oats one part, barley or buckwheat one part; the corn may be cracked or given whole as desired. Feed this morning and night in a heavy litter, making the birds scratch for all the grain they get. In a dry-mash hopper put some dry bran or crushed oats, depending upon the price; leave this before the birds all the time. In another hopper put beef scrap alone, or ten per cent beef scrap mixed with bran. A supply of grit and oyster shell should be available to the birds; also plenty of water, though if milk can be obtained give them what they will take of it as well. Should there be plenty of table scraps and milk, the beef scrap could be left out, but give what will take its place to the pullets rather than to the old hens at this time of the year.

Feed regularly; not just when you happen to think of it; let some one person be responsible for the work.

If it has not already been done, now is the time to see about a special egg-market. It is during the early winter months that consumers find it difficult to get new laid eggs, so that those who have what others are willing to pay a good price for, if they can be shipped direct and with an absolute guarantee.

December.—Go over the poultry house again; make sure that it is ready for cold weather; see that the cracks are all stopped, especially on the north side; provide for plenty of ventilation without draughts. The month of December should be a continuation of the work started and carried on in November. It would be well to market turkeys and geese a week or more before Christmas; see that the breeding waterfowl and turkeys have a shelter they can call their own; don't let them mix with the hens. They do not require anything very elaborate; merely a shelter from the storm.

January—During this month the hens which were pullets last year—the best of which were kept for breeding purposes last spring—will begin to lay. They have not been housed with the pullets nor have they been fed quite as strongly. By the latter part of this month a little beef scrap can be added to their mash; but to keep hens healthy and not too fat, keep them hungry; that is, keep them working for all the grain they get.

February.—Go over the breeding pens; get ready for mating; see that there are no weaklings in the flock. be sure that the male birds are healthy and vigorous, and it is well to keep one or two extra birds in case of accident.

In the American breeds, mate at the rate of one male to ten or twelve females; in the Mediterranean breeds, a vigorous male might be mated with fifteen to twenty females. If the males agree, several can be placed in the one pen; if not, it is better to have a coop for the extra males, keeping only one with the flock at a time.

Upon the health and vigor of the breeding stock will depend largely the success of hatching and rearing during the breeding season. The safest plan is to keep only those with vigor and good constitution, and give them plenty of fresh air and exercise.—F. C. Elford, Dominion Poultry Husbandman.

Picking Out Good Layers.

There are four physical indications of a hen's laying condition, says O. B. Kent, poultry instructor at Cornell University. These are the time of molting, color of shanks, texture of comb and color of ear lobe. The first and third points apply to all breeds, the others only to those having yellow shanks and yellow in the ear lobes.

Good layers molt late and quickly. If you go through the flock the first of October and pick out the hens that are just beginning to molt, or have not started, you will get most of those which are laying.

In yellow skin breeds the paleness of the shanks after a period of laying is a good indication of a hen's capacity. Any bird with bright yellow shanks after a year of laying may be picked out as a poor producer.

Soft, pliable combs are also an indication of good laying condition. When a hen stops laying her comb dries up and becomes smaller and harder, while those which are laying will have soft and pliable combs; not necessarily large combs, however.

In breeds like White Leghorns, which show a yellow cast in the ear lobe, the color fades as the pullets or hens start laying and after two weeks or a month one can quickly pick out the layers by this change of color. It is important to observe the color and shade during the year.

No one of these tests alone is infallible, and maybe not all of them when taken together, but when carefully applied by an observing poultry keeper they should prove a great help in sorting out the flock and picking the good and the poor producers.

Moulting Season.

The fall of the year is the natural moulting season. A hen's ability as a winter egg producer depends largely on how she passes this moulting period.

While the moulting period can be forced and shortened by the use of stimulants, it is usually best to allow it to take its natural course. As a general rule the hens that moult late and quickly are the highest producers and the early moulter is seldom a winter layer.

To grow a new set of feathers is a severe drain on the birds and the nature of the feed at this time is of the utmost importance. The common grains such as wheat, corn and oats fed in sufficient quantities will keep the fowl warm and maintains the body weight, but these grains alone are not enough. The fowls need some real feather making food, rich in protein and mineral.

A mash composed of equal parts by weight of wheat bran, ground oats or berley, shorts and meat scrap will make a very good supplement to the grain ration. The addition of one half part each of oil meal and sunflower seed to this mash will give the new coat of feathers a very sleek, glossy appearance. If the hens do not have full access to some form of green feed it should be supplied. One of the best green feeds is cabbage. At this time of the year cabbage is usually plentiful and the waste leaves and spoiled heads make a valuable feed for the moulting hens.—C. S. Anderson, Colorado Agricultural College, Fort Collins, Colorado.

Farm Poultry Houses.

No particular style, size or shape of house is the best under all circumstances or in all sections. In northern climates with deep snows and strong, cold winds, houses must be built much more thoroughly than further south. There are certain essential points which every house must embody in order to give entire satisfaction.

A good house must be dry, well ventilated, but free from draughts, with a southern exposure, with windows or openings that will provide a good supply of sunlight and protected as much as possible from strong north and west winds. The house must be economical of construction, easy to keep clean and sanitary.

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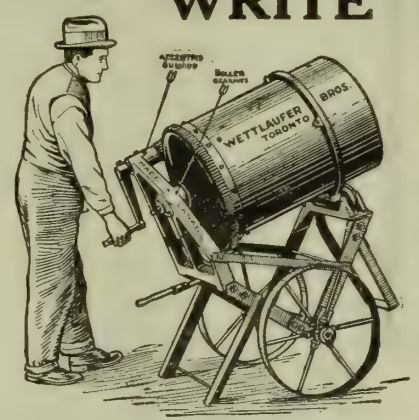

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open is shown in the picture, provides good ventilation, a plentiful supply of sunlight, is easy to keep clean and sanitary, and is economical to build. The nearer square it is made, the cheaper it can be built.

A house 16, 18 or 20 feet square of this shape will provide accommodation for 75 to 150 fowls. It shuold be 4 to 4½ feet high at the rear, 8 feet at the highest point, 6 feet where the front part joins the rear, and 3 or 3½ feet in front. Nail an 8-inch board above the front sill to keep out the snow. Cover the space above with inch-mesh wire netting to keep out sparrows.

In severe climates half of the open front can be enclosed in winter with glass and the balance with cloth-covered frames. Across the rear of the building 2 feet from the floor build a platform 4½ feet wide of matched boards, and 9 inches above this place three roosts of 2x4's 12 inches apart on the centers.

Dead Leaves for Litter.

Leaves gathered when they are thoroughly dry constitute the very best litter for the poultry house. There is usually but one time in the early fall when freshly fallen leaves in the weeds and along roadsides are in prime condition for such use. This lasts only a few days, and it is at such times that they should be gathered.

Barrels or sacks may be used for storage, but if an abundance of room is available, it is best to put them away loose. Empty stalls or grain rooms offer the most satisfactory means of keeping such litter free from mold.

If there is anything in which a hen more dearly loves to scratch than rustling leaves we have yet to see it. A flock will work busily all day long in such litter—far more contentedly than in straw. Continual scratching reduces the leaves to a mass of powdery mulch in which condition, bearing a generous amount of droppings, it becomes a splendid product for the home garden. Not only is such a soil dressing of some fertilizing value, but it provides a large element of humus which is of great worth.—Orin Crooker.

The Poultry Breeders' Opportunity.

Canada in past years has imported more poultry and more eggs than she has exported. Yet her production has materially increased, but it has failed to keep pace with the consumption. In twenty years the egg production developed from 64,499,241 dozen to 123,071,034 dozen, but the consumption increased from 11.8 per capita to 17.39. That is to say the individual fondness for eggs had increased over fifty per cent. The population grew in those twenty years, or from 1891 to 1911, according to the census, from 4,833,239 to 7,204,838, an increase of 2,371,599, and the egg production mounted up 58,571,793 dozen. In spite of this fact, and although the exports fell about to zero, 2,378,640 dozen had to be imported. In the same time the number of poultry in Canada grew from 12,696,701 to 29,548,723. Here again, although the increase was close upon thirteen million, the imports exceeded the exports in value to the amount of $111,696.

Last year, the excess of imports of eggs over exports reached the virtually enormous total of 11,150,106 dozen, while of poultry in 1914 we exported in value $206,370, but we imported $406,366, a difference against us of $199,966. These figures, striking as they are, and almost impossible as they seem, are yet official, being taken from Pamphlet No. 7, of the Poultry Division of the Dominion Department of Agriculture, entitled, "The Egg and Poultry Situation in Canada, with notes upon the possible effect of the war upon the Development of the Industry," by W. A. Brown, B.S.A., M.S., and can be verified on application for the pamphlet to the Publications Branch, Department of Agriculture, Ottawa.

The statistics given in the pamphlet are both phenomenal and interesting. No other articles of food have shown such an increase in popularity. At the same time prices generally have increased and been well sustained. Mr. Brown does not undertake to explain the phenomena, but contents himself with proving that it is so and that the increase in every particular is common to all the provinces. He also gives particulars of imports of poultry into Great Britain, which in 1913 amounted in value to $5,411,684, of which Russia supplied $1,640,923, the United States $999,890, Austria-Hungary $470,767, Italy $410,902, China $219,472, Egypt, $130,300, Holland $121,739, Belgium, $108,268, Norway $68,960, Germany $58,005, and Canada, seemingly, nil.

From the foregoing figures and the general condition of things in Europe, Mr. Brown arrives at the conclusion that Britain will this year be short of eggs and poultry to the amount of a million and a half of dollars, or of eggs alone to the sum of one hundred million dozen.

Rhythm of Fgg Production.

Where it is possible to trapnest for at least thirty days, much can be told of a hen's value as an egg producer by the rhythm of egg production. The number of eggs produced by a hen without missing a day is called a cycle.

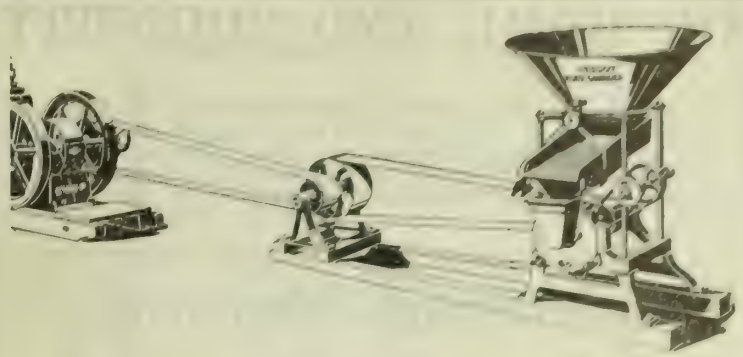
The number of eggs in each cycle tells whether the egg organs have the ability to produce eggs rapidly and the frequency with which these cycles are repeated tells whether the hen has a constitution which will stand up under the strain of heavy egg production. In other words, the number of eggs to the cycle tells the hen's breeding and repeating the cycles tells of the constitution.

If a hen lays four or more eggs to the cycle and repeats the cycles with only one or two days missed, she is a good hen. If a hen lays three or less eggs to the cycle and misses two or more days between the cycles, she is of little or no value as a egg producer.

The hen which lays 20 to 30 eggs in one cycle then misses 10 or 15 days should be classed with the hen which lays regularly, but lays only one or two eggs to the cycle. The first has well-developed egg organs with a weak constitution, while the second has a strong constitution and weak egg organs.

This method of selection is of value where the hens are trapnested for only two or three months during the breeding season or if a hen has been two or three months during the breeding season and should be killed, the rhythm of egg production would give an idea of the value of the offspring.—C. T. Patterson, Missouri Poultry Experiment Station.

Cockerels designed for the market should be prepared in the shortest possible time as the greatest profit is secured by marketing the fowls just as soon as they are ready. Leghorns and the lighter breeds should be sold as broilers as soon as they reach 1¼ to two pounds, as beyond this weight the gain is not made at a profit and the birds soon become hard and "buddy." The heavier and slower maturing breeds can be marketed as broilers, fryers or as soft roasting chickens, but in either case they should be made ready as quickly as possible. Fattening in pens has been found the most economical method of preparing broilers for market.



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Vessot grinding plates do their work so uniformly well that a clean, satisfactory job is assured. The two-sieve spout removes all foreign matter, from nails and stones to dust and sand. One caution only—use steady, reliable power to drive a **Vessot** grinder, such power as is furnished by an **International Harvester** oil engine—**Mogul** or **Titan.**

Buy a **Vessot** feed grinder in the size best suited to your work and a **Mogul** or **Titan** oil engine to run it.

See the I H C local dealer, or write to the nearest branch house for full information.

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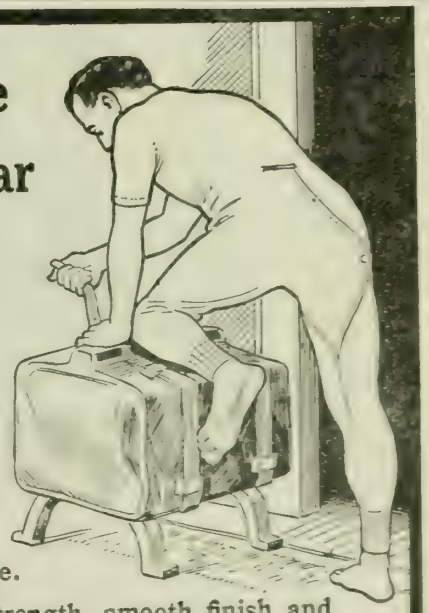

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

A Militant Measure.

By Emma Clayton Seabury.

If you do not like things as they are in my home, you know what you can do, Esther; leave them. I can doubtless get another cook. These things have been good enough for me and mine for a quarter of a century. A city school-teacher cannot metamorphose country living in a day, or a year, or ever. We may as well understand each other, and stop talking."

"But, Arthur, have you forgotten we talked all these improvements over before I came—the things most needed for comfort, and those desired for beauty? Does a promise mean nothing after a marriage ceremony?" Her cheeks were aflame, her eyes flashing through indignant tears at the injustice of it all.

"No, I think most of us lose our heads before we are married; we get down to common sense after."

"Then you mean to say that you do not intend I shall have a new stove this winter? That I must endure the smoke and discomfort of this old one, which spoils half the things I attempt to cook and bake?"

He shrugged his shoulders. This hot-headed woman needed discipline. "Times are close; we can get along very well, Esther, and I hate scenes. Let us have no more."

"Times are close because you are close, Arthur. What is forty or fifty dollars in the bank at three per cent, to a woman's comfort and happiness? You love your money more than your wife, and so you shall enjoy your money!"

She turned and went into the house. The afternoon sun streamed through the windows, and there was a gold and crimson gleam in the vines which she fastened back on their trellis. The trellis she had made. How beautiful and peaceful the country landscape lay in its sweep of upland and meadow, of forest and hill. The spire of the village church seemed to hang like a star in the misty silence—everything at rest but her own tumultuous heart.

She had been married a year. She had left her well-paying position as a city teacher for the home of this farmer whom she had met the summer before at a resort near. She was so tired of teaching she almost disliked children sometimes—so tired of the noise and smoke, the bustle and hustle, the drudging routine, and she longed for a home of her own. She had buried the little romance of her girlhood's love years ago, and was the sweeter and better for it, anl she took all her enthusiasms, her ripened experience and judgment, her mature womanhood and its disenchantments, to her new life.

Her husband had always been kind and sympathetic, except when the money question came up. Then he froze up and disappeared as soon as possible.

His first wife had lived and died in the same small economics with which she had commenced her married life, when economy was a necessity. As he prospered and accumulated, barns and storehouses were added, cattle, horses and carriages—anything for his own convenience and pride—but the old house remained the same.

He had papered a couple of rooms before he had married, and promised all the improvements Esther wished should be under her supervision thereafter. So she had waited and hoped, but the time never came.

When Esther had seen the new paper she had recoiled from its hideousness, and as soon as possible, not to seem unappreciative, she and the hired man peeled it off and calcimined the walls. She said it was to match the rug, which she had woven from the cabbage-rose wreathed carpet that was a nightmare to her cultivated taste. So she had used up all her savings, and school-teachers can have very few, if they meet the demands upon them in the poorest paid of all the professions, the most exacting and nerve-racking.

There were white muslin curtains at the windows and dainty bedding, instead of heavy patchwork quilts. She had worked hard to make the home what it was, and had it so changed that she was no longer ashamed to have her friends see it. She had trusted him for the necessities, and she had coaxed and pleaded a year for them, to lighten her work, to which she was all unused—but all in vain.

She had no more money, and finally she had decided to bear it no longer. She felt she had spoiled him in supplying what he would not, and that he must loosen his purse strings for necessities. She had come to a point where her judgment told her she was catering to his selfishness and laying up trouble for her old age—hence the final appeal this morning and the cutting words and taunts.

She was aroused from her bitter musings by the postman's whistle at the gate. She brushed away her tears, and hurried down the walk over which the trees arched lovingly, to the letter box, the only link between her and her past.

She gave a little cry of joy at the bunch of letters and gifts awaiting her from city friends. They were full of loving remembrance of her birthday which had been yesterday.

Arthur had forgotten till evening, and then they had driven to town, where he had invested in a fifteen cent box of candy.

Here was a box of Huyler's, a dainty apron and handkerchief, a cushion cover, a scarf and lovely veil, with cards from the teachers and some of her old pupils. What would they all think if they knew how he had talked to her that morning

Then she opened the last letter:

Dear Esther:

I am going abroad for a year. If only you were here to take my place, we all say, it would be ideal. You had better come and let the old farm run itself for a year, for Esther, with my salary you could save enough to make your home prettier and more inviting.

Forgive me, dear, but I saw this summer how things are. You are a dear, brave girl, and you did not mean I should see, but I am not blind. Maybe it pays to give up all you have of the graces of life for board and washing, part of which you do yourself, but I think it is very doubtful. Sometimes a stingy man needs a wholesome lesson to open his eyes to the value of a wife like you. This is not an age for a woman to endure what she was never meant to endure—being a drudge, without the modern conveniences of even a city slum apartment.

Come and take the school, and I shall leave, feeling my work is in good hands. I must know at once, so please answer without delay.

Lovingly, Adelaide.

Here was a way out. He had told her to take it, or cease to complain. She knew men better than a year ago, and that sometimes a man's respect for a woman increased in proportion to her money independence of him. It mattered little whether it was thoughtlessness or penuriousness, patience had ceased to be a virtue.

She had the individuality and quick decision which teaching develops, and she was not used to being ruled in a dogmatic manner. She had renounced everything for love's rule, and had it been wisely administered, she would have asked nothing better, but she felt she had nothing further to expect from her husband, except a repetition or refusals of what she needed.

Dear Adelaide:

I will take the school. Keep the place for me. I shall go to the city tomorrow.

Sincerely, Esther.

She put it in the box and saw the postman take it out. She breathed a new sense of freedom and went back to her kitchen stove, and valiantly labored with it, prpearing the evening meal.

"Mother, where are you " cried a voice from the door. Her heart sank. In her absorption she had never thought what this would mean to Lucy, and she loved her step-daughter dearly.

"Here, my dear, in the kitchen."

"O, how the old thing smokes! It is a shame you haven't a new stove. You must have one. When I grow up you shall have everything you want," and the girl kissed her stepmother passionately. There were tears in Esther's eyes as she kissed the dark-eyed sensitive girl—but the step was taken; she could not go back.

The supper table was decorated with autumn leaves and was unusually attractive and there was a good hot supper. Esther tried to seem lighthearted and happy. Arthur sulked and said little to her and Lucy, who was bubbling over with spirits. He was injured and he inteded to prevent any more scenes. He would be so disagreeable she would not dare again. How little he dreamed she was unafraid of any man.

After supper she helped Lucy with her lessons, and they talked of the city school and its advantages, and how some day Lucy would be in one worthy of her. They went upstairs, and still not a word from her husband. She tucked Lucy in bed and kissed her. "What a grouch Daddy has on tonight. What is the matter?" asked the girl

"Some business trouble probably," replied her mother.

She went into the guest room she had made so dainty, and locked the door. She pulled out her steamer trunk and packed it, then packed her big trunk in the closet. After that she went downstairs, but Arthur did not look up nor speak, and so she went back and slept in the guest room, and was conscience-stricken that she dreamed a dream of freedom.

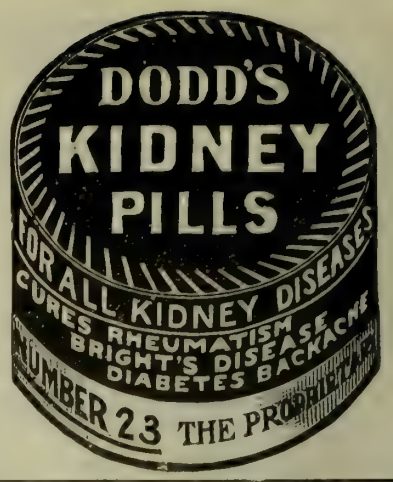
At breakfast she was smiling as usual, but her husband was glum and silent.

"I am going to town; I shall not be back till ten o'clock," he said, after the meal was over, but without looking at her. Usually he asked her to go with him, when he expected to be gone all day.

"All right. But Arthur," and there was a little break in her voice "won't you kiss me goodby?"

He did not seem to hear, nor did he look at her as he went off gloomily. She turned to Lucy and helped her off to school, and then broke down and cried as if her heart would break.

After a while she bestirred herself and made the house tidy, and then she went over to her nearest neighbor. Aunt Mattie was an old maid cousin of sixty-five, who had introduced her



TWO WOMEN SAVED FROM OPERATIONS

By Lydia E. Pinkham's Vegetable Compound—Their Own Stories Here Told.

Edmonton, Alberta, Can. — "I think it is no more than right for me to thank you for what your kind advice and Lydia E. Pinkham's Vegetable Compound have done for me.

"When I wrote to you some time ago I was a very sick woman suffering from female troubles. I had organic inflammation and could not stand or walk any distance. At last I was confined to my bed, and the doctor said I would have to go through an operation, but this I refused to do. A friend advised Lydia E. Pinkham's Vegetable Compound, and now, after using three bottles of it, I feel like a new woman. I most heartily recommend your medicine to all women who suffer with female troubles. I have also taken Lydia E. Pinkham's Liver Pills, and think they are fine. I will never be without the medicine in the house."—Mrs. FRANK EMSLEY, 903 Columbia Avenue, Edmonton, Alberta.

The Other Case.

Beatrice, Neb.—"Just after my marriage my left side began to pain me and the pain got so severe at times that I suffered terribly with it. I visited three doctors and each one wanted to operate on me but I would not consent to an operation. I heard of the good Lydia E. Pinkham's Vegetable Compound was doing for others and I used several bottles of it with the result that I haven't been bothered with my side since then. I am in good health and I have two little girls."—Mrs. R. B. CHILD, Beatrice, Neb.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

to Arthur. She had kept house for Mr. Stilson after his first wife's death, and taken care of Lucy, and had a heart big enough to mother the world. She loved Esther as if she were her own daughter.

"Aunt Mattie," Esther said huskily, "I want you to go over and take care of Lucy and the house. I am going back to my school."

Then she broke down again and buried her face in Aunt Mattie's lap.

"Oh, Esther, is it as bad as that You know, dear, I told you of his peculiarities. He seems stern and autocratic, but he has the bst heart in the world, though he makes grave mistakes. He sent his two boys away from home without a penny, he shortened the life of his wife, and now you are going away. When will he learn his lesson? You thought you could manage him A man—yes, and a woman, too—is sometimes like a mule. He needs a beating, metaphorically, to make him wake up to see things. But this will break Lucy's heart!"

"Oh, that is what breaks mine. Aunt Mattie. But I shall send for Lucy soon if he will only let her come."

"Why not take her with you, Esther?"

"I dare not do that. My life is my own, but she is his, and he loves her in his own way."

"Please send your man over for my trunks, and Aunt Mattie, I shall have to borrow money to go. I haven't a penny. Think how hard it has been for me to beg for a postage stamp. But that is over now. In a month I shall pay back with interest," and she kissed her tenderly.

"Yes, dear, all I have is yours, though it is not much, you know. I will do the best I can for them, but I dread it, Esther."

At noon the sorrowful wife went to a town in an opposite direction to the one her husband had taken, leaving the following letter for Lucy:

My dearest girl:

"I am going away to take my old school for a while, but how my heart will ache for the dearest girl in all the world! Take good care of Aunt Mattie and Daddy, and remember, you are the home maker now. I shall send for you by and by. Be brave, dear, if you love me as I love you.

Lovingly, Your Mother."

To Mr. Stilson she wrote:

Dear Arthur:

I have taken you at your word, and have gone to teach Adelaide's school, while she is abroad. Aunt Mattie will care for you. Be very tender with Lucy, and let her come to me soon. I am sorry that you would not kiss me goodby.

Sorrowfully, Esther.

Lucy had read her letter and cried herself into a sick headache before Mr. Stilson came home. He read his letter, with white face and tightened lips, and then went upstairs without a word. Later he stole into Lucy's room. She was wide awake, and flung her arms around his neck and sobbed hysterically.

"There, there," he said huskily. "Don't ,Lucy; please don't, I cannot bear it."

But the child paid no attention to him. "If you had done what you promised she would never have gone away. What shall I do, oh, what shall I do? I know I shall die; I mean to!"

He turned away in despair and called imperiously. "Aunt Mattie, come up and quiet this child, if you can." Then he went into his room to battle with himself, and to think more deeply than he had ever done before.

Meanwhile, into the city, every street of which was so familiar, swept the train bearing Esther without her dreams. She went to the family hotel where she had lived for ten years before her marriage, and was not, as her conscience told her, nearly as miserable as she ought to be.

She explained nothing and no one questioned the dignified, reserved little woman. It was easier in the city among tragedies than in the quiet country life. She was only one of many here, and she knew that in her work and her love of it, she would lose herself. She was hungry for libraries and pictures, for lectures and concerts, for her church and friends—all of which she had so gladly given up for marriage, and a drudge's place in a kitchen with a smoking stove, she said to herself bitterly. Arthur had never loved her. He only wanted a housekeeper for himself, and a caretaker for Lucy. Aunt Mattie would do just as well.

Her work seemed easy after the farm work, and she loved it, but her heart ached for Lucy and the love she had idealized.

Next morning Mr. Stilson ate his breakfast in silence. Then he asked Aunt Mattie. "Did you lend Esther money to go to the city?"

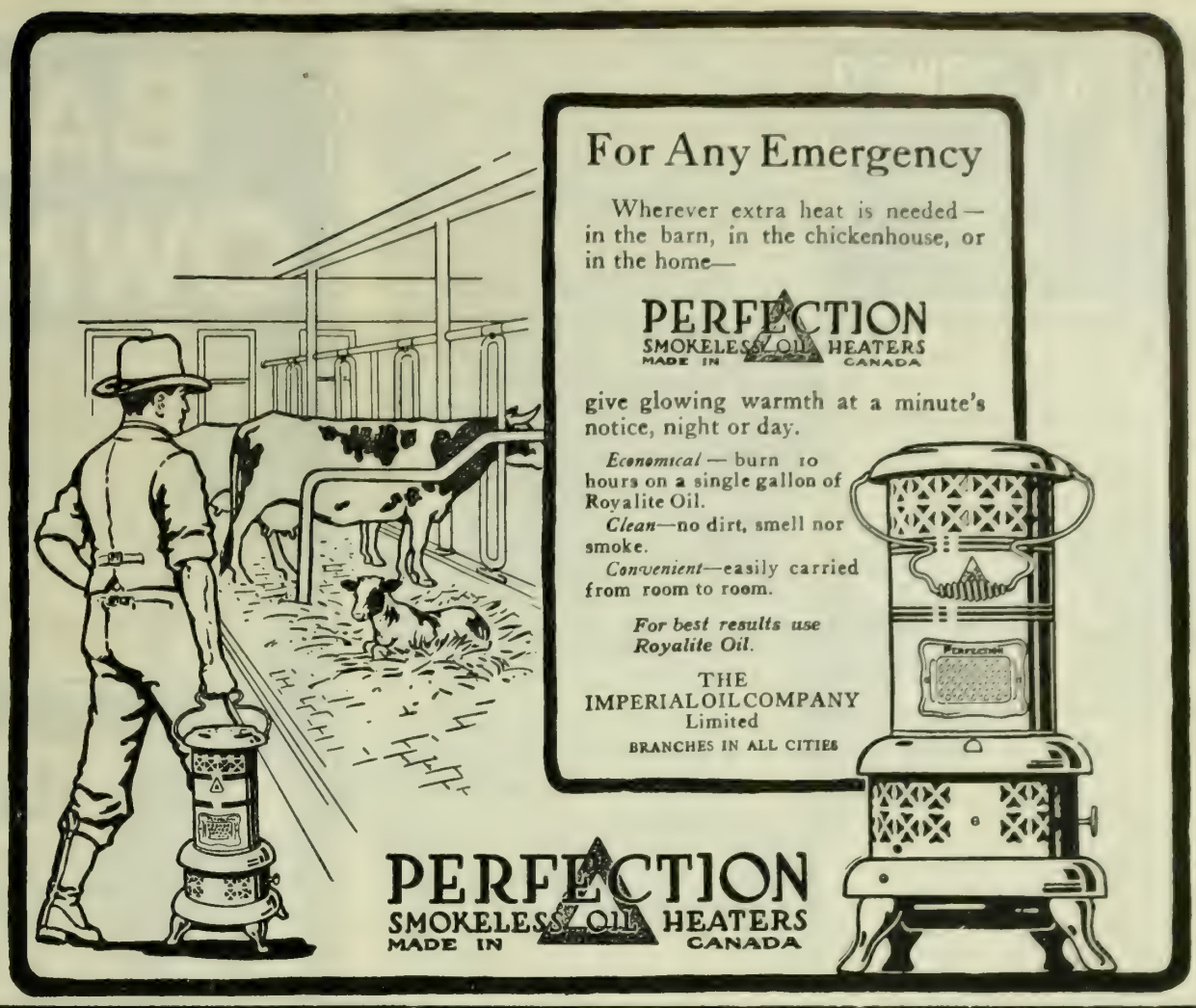
"I did; she hadnt' a penny of her own," replied Aunt Mattie.

He handed her a twenty-dollar bill. "Is that enough? I prefer to pay you."

"That is what she borrowed, but I think she'd rather pay me herself."

He threw the bill on the table and strode upstairs. Lucy's room was cold and she was huddled down in the comforts. He remembered how Esther had urged him to run a pipe from the dining room through Lucy's room, and put a drum in it. Lucy did not move, and he bent over and called softly: "Lucy dear."

She flung a hand out at him to push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Wherever extra heat is needed—in the barn, in the chickenhouse, or in the home—
PERFECTION
SMOKELESS OIL HEATERS
MADE IN CANADA
give glowing warmth at a minute's notice, night or day.
Economical — burn 10 hours on a single gallon of Royalite Oil.
Clean—no dirt, smell nor smoke.
Convenient—easily carried from room to room.
For best results use Royalite Oil.
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BRANCHES IN ALL CITIES
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So Good for Children
Millions of pounds of delicious "Crown Brand" Corn Syrup are sold every year to mothers, just for the children.
EDWARDSBURG
"Crown Brand" CORN SYRUP
Mothers know it is practically all nourishment. They know it is a food—that Bread spread with "Crown Brand" makes a well balanced food that sustains and builds up the strength.
Mothers know, too, that "Crown Brand" is the most economical "sweetening" for all sorts of Cakes, Pies, Puddings and Sauces—and is the whole thing for delicious homemade Candies.
"LILY WHITE" is our pure white Corn Syrup—not so pronounced in flavor as "Crown Brand"—equally choice for the table and for candy making.
ASK YOUR GROCER—IN 2, 5, 10 AND 20 POUND TINS.
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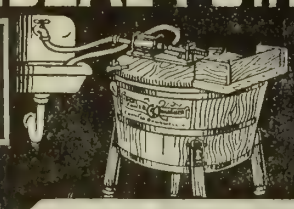
7

RED ROSE TEA "is good tea"

IDEAL POWER



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works rapidly with the best results and will last a lifetime in ordinary use.
It is operated by water power from an ordinary city tap and can be depended upon for the hardest kind of service.
Thousands in use. Ask your dealer about it, or, write us direct.
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It looks more and more as if, owing to scarcity of skilled men, women will have to do much of the work hitherto done by men.

This is especially true of office work.

Of course, we are prepared to qualify either men or women to take advantage of their opportunities, and you can enter at any time.

Send for Catalogue containing tuition Rates, etc.

THE ST. JOHN Business COLLEGE

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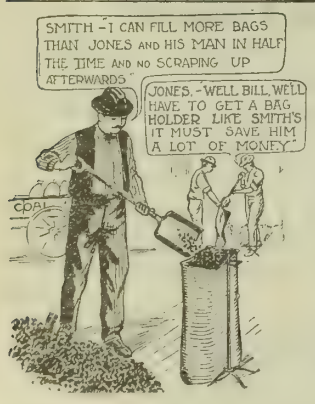
SMITH - I CAN FILL MORE BAGS THAN JONES AND HIS MAN IN HALF THE TIME AND NO SCRAPING UP AFTERWARDS
JONES. - WELL BILL WELL HAVE TO GET A BAG HOLDER LIKE SMITH'S IT MUST SAVE HIM A LOT OF MONEY
COAL

The Peerless Self-adjusting

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Special Sale price, each **$2.95** f.o.b. Toronto
Agents Wanted

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180 A. Spadina Ave., Toronto.

Send in 5 New Subscribers to the Maritime Farmer at 80c each, and get a beautiful piece of Cut Glass or Silverware.

him away and then she burst out between sobs: "Don't come near me, Daddy. I have been awake all night, thinking how you have sent her away, and I cannot love you any more. She was so good to us, and worked so hard, and you wouldn't get her a stove, or put in a sink, or a new floor, or get the wood cut, and piled in the shed, and put the pump in the kitchen. And now she doesn't have anything to do but teach, and she gets a hundred dollars a month. She doesn't have to get breakfast, or make fires, or anything, and her room is warm. Of course she will never come back. She would be a fool. You never gave her a penny, and I cannot love you, Daddy, to treat her so, and I know I shall die!" She covered up her head and burst into uncontrollable sobbing.

Mr. Stilson was appalled at this tiny rebel. No human soul had ever talked to him like that before. He was conscious he should scold and punish her, but he had no nerve left. He only pleaded "Lucy, Lucy," and left the room in despair.

"Aunt Mattie, get Lucy down here on the couch, where it is warm, and get her some breakfast."

He remembered how days and weeks after her mother's death when she had drooped lower, and lower, he had thought he should lose Lucy too. Then how she had blossomed under Esther's care and love. What could he do He went out and hitched up the horses, but he felt ashamed to meet his neighbors. What would they think? She might at least have asked him to take her to the train, and not have shamed him utterly. He felt angry and bitter, but crushed and alone.

He drove away without any definite object. Then he stooped at the house of a carpenter, and asked him to look in some time about some repairs. He ordered the hired man to cut some wood and pile it in the shed for Aunt Mattie. He wished Esther knew.

At noon Lucy lay still and white on the couch, a hot stove plate at her feet, her head wrapped in a cold compress, which she pulled over her eyes when her father came in. She had eaten nothing, nor did she speak or move. The storm was spent, but she was exhausted and ill. At night it was no better, but next day a big fat letter came for Lucy, and there was a box of candy, and tiny handkerchief with her name on it, and Lucy sat up and smiled.

Among other things Esther begged Lucy to be brave and sweet, and to help make a home for Daddy, and help dear Aunt Mattie. She told her of her room, and how her desk was piled up with flowers, and how glad her friends had seemed to see her. She had been to a concert last night, and was going to a lecture tonight, but she missed her dearest girl every moment, and would send for her soon, if Daddy was willing.

Lucy cried tears of joy over it, and every day thereafter came a letter to her or Aunt Mattie, but not one word for her husband. He stole the letters and carried them to his room every night and read them, but found scant comfort.

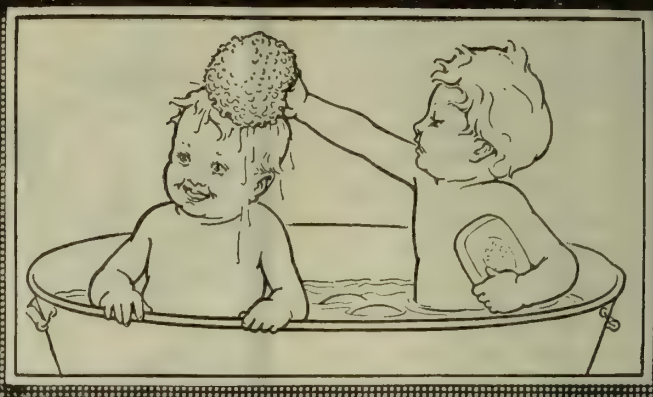
Lucy blossomed under love and hope again, and went to her little country school, Aunt Mattie mothering her as best she could. They spent their evenings together, or talked or read apart, while Mr. Stilson pored over his paper. He was silent, knowing Lucy had not forgiven him, and they never spoke of Esther.

Before Thanksgiving Esther wrote to Arthur, begging for Lucy for a week. She said: "I will meet her at the station, and also see her off, and pay all expenses." He winced at that word "expenses," and told Lucy to write her mother that she could go, but that her father was able to pay her expenses.

Such a flutter of joy as Lucy was packed off in. Such a beautiful time as she had with Esther, for the city was like a fairy tale to her. And such a lonesome Thanksgiving as Aunt Mattie and her father had. He wrote to ask if Lucy needed money, but did not enclose any, Esther noted and sighed.

Lucy was too much her father's daughter ot make any sign of contrition when she left him, but Esther insisted on her writing home twice a week. She stayed ten days, and was to go back at Christmas with Aunt Mattie, so the time flew by swiftly. Esther hoped against hope that in the Christmas spirit Arthur would ask her to come home, though she intended to refuse and work the year out. She had also made up her mind that she

BABY'S OWN SOAP



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The creamy softening lather of Baby's Own Soap and the fragrance of its delicate aroma leave the skin cleansed—refreshed—aromatized

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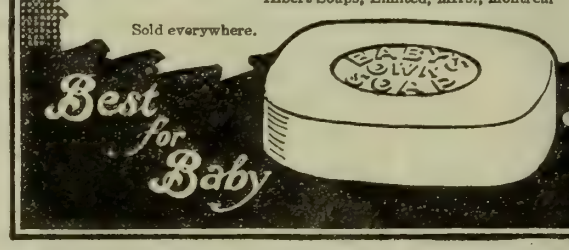


SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of **ill-health**, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience,** we know better than any doctor; and thousands have proved there is **hope** even **for the hopeless** in my method of home treatment. **If you suffer from pain in the head, back, or bowels, feeling of weight** and **dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid,** to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured,** my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—**young or old.** To **Mothers** of **Daughters,** I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask** for the **free treatment to-day,** as you may not see this offer again. Address:

MRS. M. SUMMERS. **BOX 309, WINDSOR, ONT.**

would insist on his coming to her.

When Lucy came back she talked of nothing but Esther and the city, and a great pang of jealousy pierced her father's heart. But he steeled himself against it, and shut out her innocent prattle to Aunt Mattie, while he wrapped himself in his own bitterness.

Christmas came and went, and still he made no sign. Esther sent for Aunt Mattie and Lucy, and made them the happiest people in the world, Mr. Stilson declaring he was going away too, and insisting on their departure. He really went to a church dinner, and was asked so many questions about Esther and Lucy, that he left early, pocketing his wounded pride.

To make matters worse, his oldest son came home, to find his father keeping bachelor's hall in the smoky kitchen.

"What under the sun is the matter with you anyway" said he. "That woman is fit for something better than an old rat trap of a place like this. She is a fool if she ever comes back. Do you mean to stay here alone the rest of your life?

"Joe and I would have gone to the dogs, very likely, if Uncle Harold had not made men of us. Now you've quarrelled with Lucy and Esther.

"Say, why don't you tear down this old house, or move it back for the hired man and build a neat bungalow Leave Lucy with Esther for the winter, and surprise them next summer?"

"When I want your advice, Dick, I will ask you for it!"

"No charge, Daddy. Now come back to town and get a square meal with me. You said you thought you would sell that twenty-five acres of pasture land. I've got a scheme. I have some plans with me I drew up for a friend of mine—the cutest little house, and not so small either. We will look them over after dinner."

"You need not trouble yourself, Dick."

But they went to town and had a good dinner, and Dick rattled away in his good-natured way.

"It makes me laugh, Dad, to think how terrified I used to be when you bluffed me, and how I kept silent a long time in consequence. But Dicky is never bluffed nowadays."

"I am not an architect for nothing. Now look at this house. And the beauty of it is that it won't cost more than three thousand, and look what you get!"

So they talked everything over, Dick battling for all modern improvements, and winning out every time. He also suggested that Lucy remain with her mother and go to school with her for the winter.

The next day they rode around and interviewed contractors and workmen, and had a really very chummy time, the first since Dick left home. "And all because I am no longer afraid to beard the lion in his den," Dick chuckled to himself. "Of course, Esther will win out."

"Dad, Joe and I are going to educate Lucy, and have you and Esther come and keep house for us some winter in the city."

"I think I can manage Lucys' education without your assistance, young man," his father returned sarcastically.

"All right, then, but she is a beautiful girl, and she shall have the best; we have decided that."

So Lucy stayed with Esther, to the great joy of both, and a check came for her board and clothes. And Esther for the first time cried over that check.

Aunt Mattie went back to the lonely house. Winters always go by somehow, the cold and snow, the shut-in days, the short gray days, the blustering and sleet, in the country. In the city they were as paradise for Lucy.

When the May sunshine came, Esther drooped in the confinement of her school work. She longed for the country in May, the apple blossoms, the velvety green everywhere. And she loved the chickens and the frisky lambs, the cattle and horses. She longed for the rides, and the freedom of it all. Still Arthur did not write to her, but he asked the date of the closing of the school, and said they would of course spend the holidays with him. Black Dinah would be there and do the hard work, and Lucy and Esther could live outdoors and rest.

"You will go back with me, mother dear. I cannot go without you," Lucy pleaded.

"I hope to, dearest," was all Esther could say. Once she said, "You know I can never go back to that old stove and the hard work again. You would not want it, Lucy."

And Lucy answered quickly, "No, mother, I never shall ask you."

The girl wrote passionate, pleading letters to her father, which no one saw but him, and he finally wrote her: "Don't worry, little girl. We are going to have the finest summer you ever had."

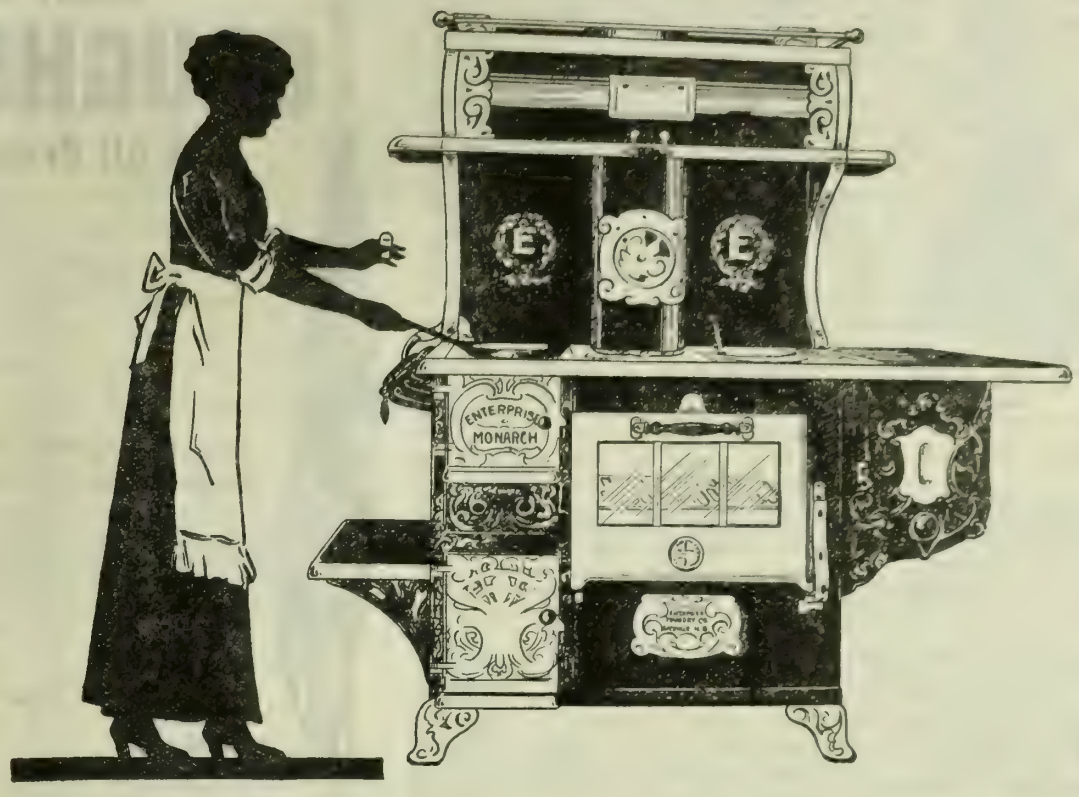
Then Lucy wrote: "I cannot go without her, Daddy, and she will never go till you ask her. You must make the home nice for her, for she is right and you are wrong, Daddy dear. If you love me, you will do as I say."

Aunt Mattie seldom wrote, and then told them very little.

Finally the closing day of school came. The teachers were all gathered together talking of the summer's plans

(oCntinued on Page 98)

The Housewife Must Have A Good Range



She Can Get Along Without Other Things BUT a Good RANGE is Essential

The heath and happiness of the family depend on the meats they get

THE ENTERPRISE MONARCH STEEL RANGE

is the one that lightens the household burdens and enables mother to get through the kitchen work early in the day.

The Monarch has every practical time, fuel and labor saving feature you could imagine. A few of them are : Removable Towel Rod and Side Shelves, Controller Damper (saves one-third the fuel), Broiler Lift, Pouch Feed, Front Hearth, Heat Economizer, Steel Polished Top, Steel or Glass Oven Door, Airtight Cleanout, Contact Reservoir, which holds 70 p. c. more water than the old fashioned damper reservoir. A Monarch Tank NEVER burns out, and you can bake and heat water to the boiling point at the same time. The Monarch reservoir holds 3 good pails full.

This and many other features are explained with illustrations in the free booklet, "The Enterprise Monarch, The House Keepers Best Friend."

Write for a copy today, FREE.— It puts you under no obligation whatever

A Nickel Plated Pin or Ash Tray will be mailed FREE to those who write in reply to this Advertisement. Mention this paper.

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GRAY HAIR

Dr. Tremain's Natural Hair Restorative, used as directed, is guaranteed to restore gray hair to its natural color or money refunded. Positively not a dye and non injurious. Price $1.00, post-paid. Write Tremain Supply Co., Dept. 31 Toronto, Ont.

Worms Make Children Peevish

Some symptoms of worms are: Deranged stomach, swollen upper lip, sour tongue, offensive breath, hard and full belly, with occasional gripings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short, dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever. If you have the least suspicion that your child is troubled with stomach worms or pinworms, don't hesitate—get a bottle of Dr. True's Elixir. This remedy has been on the market over 60 years. Put your child on the way to good health by using Dr. True's Elixir, the Family Laxative and Worm Expelled. Good for adults also. At dealers', 35c, 50c and $1. Advice free.

Trade Mark

Knowlton, Que. Dr. True

The Rule of Kindness.

(By Graham Hood).

"Kind words are the music of the world," said Father Faber. Kindness adds sweetness to everything. Turn back the leaves upon which you have written the story of your own life! Is it not true? Have you not found that the greater part of your unhappiness has been due to the conduct of other people? Can you not truthfully say that the wrost hours you have had to bear are those which other people have caused? The thought and acts for which we ourselves are responsible bring pain enough, but we can always find relief from them by selecting a wiser course and avoiding the old mistakes in the future. Against the conduct of others, however, we have no such defense. Though we may accept the blow philosophically, and may—metaphorically, at least—turn the other cheek, the hurt is felt deep down in the heart, and we suffer—more poignantly, perhaps, because we have so successfully concealed the pain.

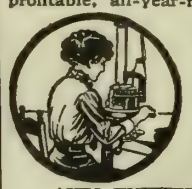
It is this very fact—the fact that unkindness can bring so much woe to the hearts of others—that should make us strive to master the art of being kind, a purpose that may be attained more easily than one might imagine. All that is necessary is that we should apply the principles of the Golden Rule to everyday affairs. By doing this we should naturally be compelled to put ourselves in the place of other people, a point of view that must of necessity be taken if we are to treat other persons as we wish them to treat us.

A man, or woman, who can—in imagination—change places with others will gradually overcome the habit of judging others, and few acts of which we are guilty cause more pain and sorrow in the world than this uncharitable practice. We know by our past experiences that it is not always possible to judge a man's motives by his actions. We know—by experience, too—that our unkind judgments have frequently proved themselves unjust judgments, even if—and this often occurs—we are not actually compelled to admit that our unfavorable opinions of others are reflections of our own character. A man who always imputes dishonorable motives to others is almost invariably capable of dishonorable acts, even when he is not actually guilty of them. A person who is forever looking for evil attributes in others is in sore need of a moral house cleaning.

Kind words and acts not only produce happiness—for ourselves as well as for others—but, as we soon discover, the habit of kindness is infectious. Our kindness, our sympathy, our helpfulness, are never wasted. Invariably they are returned—like the scriptural bread upon the waters—and often they are increased a hundredfold. In fact, it is the law that our kindness to others makes them kind to us, and as the very acts in themselves have already repaid us by adding incalculably to our happiness, the reward we gain in overcoming the tendency to be unkind is more than we could ever ask.—"The Globe Women Advertiser.'

Do you want to earn $10 a week or more in your own home?

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.



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Dept. 226 257 College St. - Toronto
(*Also at Leicester, England*)

A druggist can obtain an imitation of MINARD'S LINIMENT from a Toronto house at a very low price, and have it labeled his own product.

This greasy imitation is the poorest one we have yet seen of the many that every Tom, Dick, and Harry has tried to introduce.

Ask for MINARD'S and you will get it.

Some Hints on the Care of the Fingernails.

Finger-nail gnawing should be a punishable offence. Only a term in prison can sufficiently punish such a crime against society, for the appearance which nails so mistreated present is positively revolting. Yet many young girls who have contracted the practice of nail biting in childhood are not nearly so much to be blamed as are the persons responsible for their upbringing. The habits of a lifetime—no matter how brief may have been the span—are not easily broken, but the exercise of will power will certainly break one off the habit of biting at the nails.

"The finger-tip of the guawed nail usually becomes thick and square," but if rightly and regularly treated it may in time be made to taper. While a girl is reading or studying she may comfortably wear upon each one of the maltreated fingers little caps made specially for the purpose and so shaped as to compress the flesh about the nail into a tapering form. These caps may also be worn under the gloves used to protect the hands when out of doors or to bleach and soften them in the night, so that they really work while the wearer walks, or visits, or sleeps.

To Shape Them

As the nails which formerly have been gnawed begin to grow longer they must be handled carefull, as their texture is extremely delicate and easily broken or carcked. To shape them only the most pliable of files should be employed, and an emery board is even better, as any steel instrument is likely permanently to injure the tender nail. For the same reason the cuticle around the base of the nail should be kept from growing too rapidly by applying lemon juice. The cuticle should be pushed back a little each day, but not until the hands have first been thoroughly soaked in warm water and Castile soap and then

PEERLESS
PERFECTION
It's made right—from high grade material. In the construction of our PEERLESS FENCING we use open hearth steel wire. By this process impurities are removed from the metal, thus eliminating one of the chief causes for the rapid rusting of fence wire. PEERLESS is guaranteed to give you satisfaction. Send for catalog. Agencies nearly everywhere. Agents wanted in open territory.
THE BANWELL-HOXIE WIRE FENCE CO., Ltd., Winnipeg, Man.—Hamilton, Ont.

Britain's Defence Against

COUGHS, COLDS

and all Bronchial Troubles.

You can cure a cold in one night with Veno's Lightning Cough Cure; coughs disappear—well, "lightning" is the only word to describe the quick curative effect of this wonderful British remedy. The reason is that it strengthens the entire bronchial system, helps Nature to cure in Nature's way.

Awarded Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

One in every five of the population of Great Britain takes Veno's Lightning Cough Cure; it is the standard cough remedy in every British Dominion; it is known and valued in every corner of the globe to which British enterprise has penetrated. That surely is proof of merit Test it for yourself; it is the supreme remedy for—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness
Price **30** *cents.*
Difficult Breathing
Whooping Cough
Blood Spitting
Asthma

Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

Discouraged Woman!

A Woman Understands Your Case and Offers Relief, Free!!

There are thousands of women going along through life under a heavy physical burden; never entirely free from pain, never without those down-dragging symptoms which only a woman can fully understand; never without melancholy, depressed spirits that give rise to all sorts of forebodings and groundless fears.

Such sufferers often incur heavy doctor bills, yet it avails them nothing. Being still uncured, they do not know what it means to enjoy even one single day of health and happiness.

To all such, I want to say that I have been in precisely the same condition; caring little whether I lived or died, without hope for the future, a burden to myself and others. Because I know the joy and glad relief I experienced when I found permanent improvement through the use of the great "Orange Lily" discovery, I know how happy you will be at the quick improvement in your condition that will result from its use.

"Orange Lily" is a natural specific for our ills. It acts directly and powerfully upon the seat and centre of the trouble. Its healing, toning benefits are felt almost immediately even in the very worst cases. I am so positive of the good it will do you that I will send you ten days' treatment FREE, for the asking.

Don't Give Up!

Just write me to-day and get my free package. You'll be glad you did so, and I will be only too glad to help you. All correspondence held absolutely confidential. Address Mrs. Frances E. Currah, Windsor, Ont.

16

in olive or sweet oil heated to a temperature as hot as can be endured.

When the nails have been properly soaked and softened, an orange stick wrapped in old linen should be used to press back the cuticle, but very gently indeed, so that it shall not be torn and have to be clipped off or remain and necessarily form the painful and unsightly hangnail.

Nearly always finger-tips that have been the victims of the gnawing habit have a permanent and unsightly dark or black streak just under their upper edge. This is because lack of nail protection has permitted grime to accumulate there, and by some mischance this dust remained for long enough to allow a thin layer of cuticle to grow over it. This sort of thing may happen in the course of ten or twelve hours, and the streak is usually acquired during a long and dusty journey, when it has seemed scarcely worth while to wash the hands or to run an orange stick under the nails, as they were certain to get soiled again almost immediately, even though covered with gloves. The girl who has long, flexible nails, never has to contend with this difficulty, because the well grown, very thin nail naturally bends slightly inward at the top edge, and may be said to protect itself from grime.

While a girl is quite young, her hands are the least lovely of her physical attributes. The fingers of even the heiress to great welath, who has never put on her own shoes, are quite likely to be somewhat red and rough, while those of her sixty-year-old laundress, are white and soft—with age. But the finger-nails may always be made beautiful—and kept so—and the girl who does not cherish the ambition to have hers in that condition certainly lacks the sense of refinement which is an attribute of the thoroughly well-bred feminine person.—Daily Dispatch.

Well Brushed Clothes.

It is as necessary that daintiness should breathe forth from the clothes as that it should shine from the person. A woman may take care of her hair, her skin, her hands, and yet her clothes be sadly in need of airing or brushing or mending.

One's clothes should always be well aired after wearing, and in addition, sachet pads in drawers, wardrobes and cupboards will add a delicate, elusive fragrance that is a decided charm.

Clothes and hats should always be well brushes or dusted. A man rarely goes out without brushing his clothes; it is one of the cardinal principles of dress with a man. If a brush isn't handy a man will rub his hat with his coat sleev. But how often does a woman brush her hat, her coat, her dress? Yet dust is no respecter of persons. It will settle on a woman's clothes as quickly as on a man's.—Selected.

Adjust Height of Tables, Etc., in the Home.

A woman, 4 feet 10 inches in height, will find 32½ inches a satisfactory working surface height for kitchen tables, etc. Above this, an addition of half an inch in table height for each inch of increase in human stature will usually be about right.

Low sinks, tables, ironing boards, etc., are responsible for many tired, aching backs. By a little thought in purchasing, these pieces of furniture may be of such a height that an upright position may be maintained while the housekeeper is working at them. In any case, it is well by some means to adapt all kitchen furniture to the height of the user.

The Woman In Halifax Who Didn't

A little incident about "Beaver" Flour

MRS—(well, never mind her name) couldn't make good Pies with "Beaver" Flour. The crust was "always heavy", as she told her grocer.

He couldn't understand it, because he was selling "Beaver" Flour to all his customers. In fact, none of his customers would use western wheat flour after trying "Beaver" Flour.

The grocer asked Mrs.—how she made the pies. The recipe seemed all right until she came to the water.

"What kind of water do you use?"

"Why, WARM water, of course", exclaimed the poor young bride.

"Well, just try COLD water, ICED WATER, and you'll have the kind of Pies you read about."

"Beaver" Flour is a better pastry flour than even special pastry flours; because it contains the same choice Ontario wheat from which special pastry flours are made. In addition, it also has a little Manitoba wheat to increase its strength.

This means, more Cake and Pies and Pastry to the barrel, while retaining its whiteness, lightness and home-made flavor.

Being blended in exact proportions, it is always uniform in strength and quality—and you can depend on it to give you the best results every time.

Order a bag at your grocer's and try it when next you bake.

DEALERS—Write us for prices on Feed, Coarse Grains and Cereals. 162

The T. H. Taylor Co. Limited, Chatham, Ont.

Glenwood Ranges

Were Awarded TWO GOLD MEDALS

at the **Panama-Pacific** International Exposition at San Francisco, Cal., and were selected by the U. S. Government for Model Kitchen at the same fair.

DIRECT FROM FOUNDRY to You ONLY $33.75

One Gold Medal was awarded for the **GLENWOOD** Coal Range, the other for the **GLENWOOD** Wood Range, and yet these high-class ranges are within the reach of all at a much lower price than you will pay for an ordinary range. **BECAUSE** they are sold **DIRECT** from **FACTORY** to **YOU.**

GLENWOOD Ranges are "MADE IN ST. JOHN."

Write for Glenwood Range Book

Glenwood Ranges and Heaters

D. J. BARRETT,

Furnaces, Pipe and Fittings.

151-155 Union St., ST. JOHN, N. B.

HALF THE ILLS OF LIFE

Are Caused By CONSTIPATION.

When the bowels become constipated the stomach gets out of order, the liver does not work properly, and then follows the violent sick headaches, the sourness of the stomach, belching of wind, heartburn, water brash, biliousness, and a general feeling that you do not care to do anything.

Keep your bowels regular by using Milburn's Laxa-Liver Pills. They will clear away all the effete matter which collects in the system and make you think that "life is worth living."

Mr. B. W. Watson, St. John, N.B., writes: "I have been troubled with constipation, for the last three years, and during that time have tried several remedies, all of which failed to help me. A friend recommended Milburn's Laxa-Liver Pills, and after using three or four vials, I felt like a new man. I am now still taking them, and am positively sure that I am on the road to recovery. I strongly recommend Milburn's Laxa-Liver Pills.

Milburn's Laxa-Liver Pills are 25c per vial, 5 vials for $1.00, at all drug stores or dealers, or will be mailed on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

A Militant Measure.

(Continued from Page 95)

Esther's desk was piled with gifts and flowers."

"And you, Mrs. Stilson, where are you going "

"Oh, we shall go to the country, of course. We love it, don't we, Lucy?"

Just then a telegram was handed her, and she added with a flush on her pretty face, handing the message to Lucy: "My husband comes for us tonight."

And so mother and daughter hurried home to do their packing, and await Arthur's coming. Esther's heart beat hard when the rap came, and she went to the door. There he was, grave, quiet, dignified and handsome. Esther had almost forgotten how strongly his personality had always appealed to her. He held out his arms and folded her to his heart, and not a question was asked or a word said. Lucy cried for very joy and hugged her father rapturously.

Then came the trip to the station, two hours later, and the ride home. How lovely the country was everywhere, how green and clean and inviting! There was a full moon, and the landscape mellowed into beauty, swimming in glory to these returned wanderers. Their man met them with the carriage, and they drove along the country road with expressions of joy at every turn in the road.

"Oh, smell the clover, how delicious!" cried Esther.

"And see the trees in the river, how lovely they are. Let us go by the river road," said Lucy.

So they made the drive as long as they could, and when they reached the outskirts of the Stilson farm Esther said: "It is like the Stilson farm Esther said: "It is like the sweep of a long avenue, Arthur, these trees you planted long ago. They will be more and more beautiful for many generations."

But she was thinking and wondering about the old stove and the horrid old kitchen, in spite of herself. She never could endure them again.

Finally they turned into the gate, and Esther gave a cry of delight. Lucy screamed for joy, and while the team stopped, she jumped out and ran ahead. There was a new house, a bungalow in style, artistic and beautiful, nestling among the trees! The old house had been moved back of the barn for the hired man, and the whole place had been metamorphosed!

On the doorstep of the new house were Dick and Joe, come to meet them. Aunt Mattie, smiling and happier than ever before in her life, was there too.

Esther and Lucy ran from room to room, exclaiming over this that and the other, upstairs and downstairs, and in my lady's chamber. Dick led them to the parlor and said: "You and Dad are to go to the city tomorrow to buy the new furnishings, so they will be just what you wish, little Mother.

"Now come to the kitchen. It is the most complete room of all—a modern one, with every convenienve; such a big shining range, a tiled floor, and a sink, and running water!"

"But how could you " exclaimed Esther.

"Oh, there is a windmill outside now, I am a magician!" said Dick.

"And are we to have fried chicken for supper," cried Lucy.

Arthur stood at the door of the dining room, watching them, with an expression on his face so full of love and pride that Esther went up to him with brimming eyes.

"Will you fogive me, Arthur, you dear, blessed man?"

"Can you forgive me, Esther Can you ever forgive my stubborn selfishness? You were right and I was wrong. If you had given me an easier liesson, perhaps I might never have learned so well."

Dick shouted: "Three cheers for the Stilsons," and taking Esther's arm, he led her to the dining room, where supper was served by Dinah, to one of the happiest families in the land.

Addressing of Mail.

In order to facilitate the handling of mail at the front and to insure prompt delivery it is requested that all mail be addressed as follows:—

(a) Regimental Number.....
(b) Rank.....
(c) Name .....
(d) Squadron, Battery or Company....
(e) Battalion, Regiment, (or other unit) Staff appointment or Department .....
(f) Canadian Contingent.....
(g) British Expeditionary Force.....
(h) Army Post Office, London, England.

Unnecessary mention of higher formations, such as brigades, divisions, is strictly forbidden ,and causes delay.

Standardizing Canadian Eggs.

From present indications it would appear that one of the most important developments to date in the improvement of the Canadian Egg Trade was the action taken by the Canadian Produce Association last winter in adopting definite standards for Canadian Eggs.

Hitherto each market and in most markets each dealer had a system of grading peculiar to his own trade. This resulted in endless confusion to the consumer and great difficulty was experienced at times on the part of the producer in finding a satisfactory market for his product.

Realizing the importance of having definite standards for all live stock products, the Live Stock Branch of the Dominion Department of Agriculture has endeavored by means of pamphlets, placards, and other means to give the standards for eggs as much publicity as possible. The co-operation of exhibition associations has also been secured, prominent among which has been that of the Canadian National Exhibition Association at whose exhibition in Toronto this year in response to prizes offered, probably the largest collection of eggs ever brought together in one exhibition of the American continent was displayed. Some 7,000 dozen in all were on exhibition. The prize list for eggs was prepared in acocrdance with the standards and the judges made their awards according to the accuracy of the interpretation, on the part of the exhibitor, of the definitions of the various grades.

At a number of exhibitions where no extensive classes for eggs have been offered, the Live Stock Branch has made a display of eggs graded in accordance with the standards and in each instance has supplemented the display with actual demonstrations, in a candling booth specially designed for the purpose, of the way in which eggs of the various grades appear when candled.

In order that the consumers and producers generally may become more familiar with the various classes and grades the following explanation is given.

Three general classes for eggs are provided under the standards, viz:—

"Fresh gathered," "storage," and "Cracked and Dirties." Four grades are provided in the first class, three in the second, and two in the third.

The grades in the "Fresh Gathered" Class are "Specials," "Extras," "No. 1's" and "No. 2's." The grade "Specials" is omitted from the "Storage" class, and both specials and extras from the class for "Cracked and Dirties."

"Specials" according to the standards are eggs of uniform size weighing over 24 ounces to the dozen or over 45 pounds net to the 30 dozen case; absolutely clean, strong and sound in shell; air cell small, not over 3-16 of an inch in depth; white of egg firm and clear and yolk dimly visible; free from blood clots.

"Extras" are eggs of good size, weighing at least 23 ounces to the dozen or 43 pounds net to the 30 dozen case; clean, sound in shell; air cell less than ⅜ of an inch in depth; with white of egg firm, and yolk slightly visible.

"No. 1's" are eggs weighing at least 23 ounces to the dozen or 43 pounds net to the 30 dozen case; clean, sound in shell; air cell less than ½ inch in depth; white of egg reasonably firm;

GOOD DIGESTION

When your digestion is faulty, weakness and pain are certain and disease is invited.

Mother Seigel's Syrup corrects and stimulates the digestive organs, and banishes the many ailments which arise from indigestion.

FOR 40 YEARS THE STANDARD REMEDY

MOTHER SEIGEL'S SYRUP

FOR STOMACH AND LIVER TROUBLE

7015

At all Druggists, or direct on receipt of price, 50c. and $1.00. The large bottle contains three times as much as the smaller. A. J. White & Co. Limited, Craig Street West Montreal.

Many women with disfigured complexions

never seem to think that they need an occasional cleansing *inside* as well as *outside*. Yet neglect of this internal bathing shows itself in spotty, and sallow complexions—as well as in dreadful headaches and biliousness. It's because the liver becomes sluggish, and waste matter accumulates which Nature cannot remove without assistance. The best

CHAMBERLAIN'S TABLETS

remedy is Chamberlain's Stomach and Liver Tablets, which stimulate the liver to healthy activity, remove fermentation, gently cleanse the stomach and bowels and tone the whole digestive system. Sure, safe and reliable. Take one at night and you feel bright and sunny in the morning. Get Chamberlain's today—druggists 25c., or by mail from

Chamberlain Medicine Company, Toronto 15

The Best Advertisement

--- a friend's recommendation is often the reason for a first trial of KING COLE TEA.

Its flavor so pleases and satisfies that users are glad to tell others.

REMEMBER the Guarantee!

"You'll like the flavor"

yolk visible but mobile ,not stuck to the shell or seriously out of place.

"No 2's" are eggs clean sound in shell; may contain weak watery eggs, and eggs with heavy yolks, and all other eggs sound in shell and fit for food.

Consumers in order to protect themselves in the matter of purchasing eggs should acquaint themselves with these standards and the above definitions of the grades. Only by creating a demand for certain grades of eggs will the supply be forthcoming, and the demand can come only with a thorough knowledge on the part of the consumer as to what constitutes the various grades. It has also been frequently suggested that since the adoption of the standards consumers generally, in order to safeguard themselves, would do well to insist that all eggs as offered for sale be labelled in accordance with their proper grade.

Producers too, would do well to more systematically grade their eggs before marketing, and knowing definitely what they have in hand thereby be in a better position to demand a price commensurate with the quality supplied.

Ground vs. Whole Grain For Live Stock.

It is somewhat doubtful whether the grinding of corn for some classes of live stock is worth the labor and expense involved. Tests conducted for ten years at the Wisconsin Experiment Station showed an average increase in gains of about 6 per cent from grinding corn for hogs. The results for individual years ranged from 11 per cent loss to 18 per cent gain. The Iowa station has also done done considerable work in testing various methods of preparing corn for hogs, and found that while grinding showed a slight increase in the feeding value of corn for older hogs, such gains did not begin to pay the cost of shelling and grinding. Soaked shelled corn showed to much better advantage than the corn meal, and also proved somewhat better than the dry ear corn.

It was a question however, whether the difference in feeding value paid for the labor of shelling and soaking.

It is advisable to grind small, hard grains as kafir, milo, barley, rye, or sorghum seed, as otherwise a large proportion of the feed may not be digested.

Ground oats for horses have not shown any great advantage over whole oats, except in the case of horses that are at very hard work or have defective teeth. Grinding oats for hogs, however, will increase their feeding value from 20 per cent to 30 per cent since the hog is not able to digest the whole grain to advantage.

As much as 25 per cent of whole corn may remain undigested when fed to cattle. Unless hogs follow the cattle in the feed lot, it is therefore desirable to grind the corn to prevent this waste. Sheep will handle whole grain to much better advantage —Chas. I. Bray, Colorado Agricultural College, Fort Collins, Colorado.

Mulching Strawberries.

The object of mulching strawberries in the fall is to prevent winter-killing.

Winter-killing is usually caused by the plants dying out too much during the winter months, or by alternate freezing and thawing.

The best mulch material to use is clean straw; this is placed on the plants 4 to 6 inches deep after the ground has been frozen.

In the spring after the ground is thawed, the straw is worked around the plants. This serves several purposes, such as keeping the patch free from weeds, conserving the moisture, and forming a clean mat for the berries to ripen on.

After the fruit has ripened, the straw should be removed.—E. F. McKune, Colorado Agricultural College, Fort Collins, Colorado.

The Source of Speed

Note the STEEL LINING in these Speed Shells. An exclusive Remington-UMC feature—found only in

NITRO CLUB SHELLS

It's the source of their surpassing speed. The steel lining permits high powder-compression. This means quicker combustion and greater power. Puts ALL the power in a straight-line drive. Practically a gun within a gun. Result: Quick fire—shorter lead—greater accuracy—deeper penetration—more uniform pattern. You want more birds. Use SPEED SHELLS—and get them!

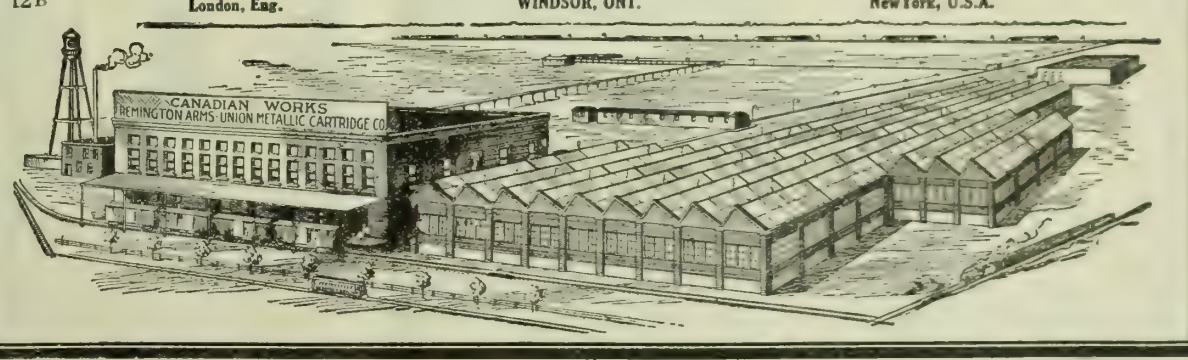
"Successful Sport"

Another name for Speed Shells in a Remington-UMC Pump Gun. A combination favored by experts and sportsmen throughout the world. Let your Dealer show you the *latest* in World-Standard Arms and Ammunition.

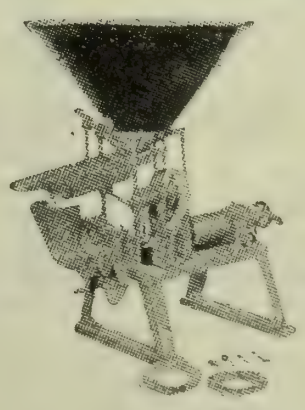
REMINGTON ARMS-UNION METALLIC CARTRIDGE CO.

(Contractors to the British Imperial and Colonial Governments)

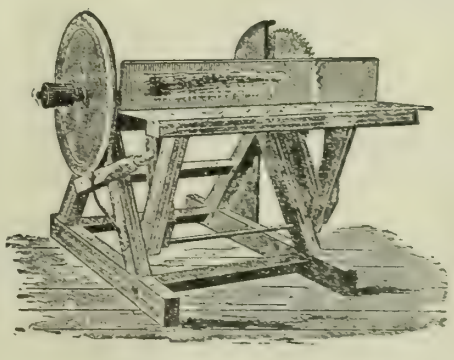
12B London, Eng. WINDSOR, ONT. New York, U.S.A.



Every Farmer Knows--It Pays to Buy the Best--We Have It.



Grain Grinder



Short Swing Wood Cutter

Root Pulper

More **Sussex Little Giant Threshers** sold this year than any previous year, and still they go. We have a few of each size still on hand and can make prompt shipment. Also have on hand, two machines, slightly used, which will be sold at a bargain to clear, guaranteed, in good repair.

Don't buy without getting our prices, we can save you money.

Our line of Wood Cutters, Feed Boilers, Hay Presses, Grain Grinders, Root Pulpers, Plow Castings, etc., is complete. Ask for our Catalogue. It will pay you.

The Sussex Manufacturing Company, Limited, Sussex, N. B.

When the Back Becomes Lame

IT IS A SIGN OF KIDNEY TROUBLE

Doan's Kidney Pills cure the aching back by curing the aching kidneys beneath—for it is really the kidneys aching and not the back.

Doan's Kidney Pills are a special kidney and bladder medicine for the cure of all kidney troubles.

Mrs. Louisa Gonshaw, 683 Manning Ave., Toronto, Ont., writes: "I take great pleasure in writing you, stating the benefit I have received by using Doan's Kidney Pills. About three years ago I was terribly afflicted with lame back, and was so bad I could not even sweep the floor. I was advised to try your pills, and before I had used one box there was a great improvement, and my back was much better. However, I kept on taking them until my back was completely cured. I highly recommend 'Doan's' for lame back."

Doan's Kidney Pills are the original pill for the kidneys. See that our trade mark the "Maple Leaf" appears on the wrapper.

Doan's Kidney Pills are 50c per box, 3 boxes for $1.25; at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

When ordering direct specify "Doan's."

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS.

THE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency), on certain conditions.

Duties—Six months residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price $3. 0 per acre.

Duties—Six months residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price $3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth $300.

The area of cultivation is subject to reduction in case of rough, scrubby or stoney land. Live stock may be substituted for cultivation under certain conditions. W. W. COREY, C. M. G.

Deputy of the Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.—64388.

RAW FURS

ALL QUANTITIES

Why not make trapping profitable by shipping to the consuming market. We can afford to pay you better prices than our out-of-town competitors, as we have direct connections with the leading manufacturers in the world.

A trial shipment is all we ask to prove this fact.

WRITE TO-DAY SURE for Price List Tags Market Reports

MAX WULFSOHN

122-124 W. 26th St., - New York City

Make NEW YORK your fur market.

America's Pioneer Dog Remedies

BOOK ON

DOG DISEASES

And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER, V. S.

118 West 31st Street, New York

from the Maritime Farmer, and get genuine stock.

Feeding the Dairy Cow for Best Profits.

(Continued from page 85.)

chine. If the supply of carbohydrates and fat is insufficient for this purpose, protein may also be drawn upon as a source of fuel, but since use of protein is expensive, since the latter is the most costly of the nutrients. On the other hand, if more carbohydrates and fat are supplied than are necessary to meet the needs of the animal, the surplus may be stored up as reserve fuel in the form of fat. The unit of measure for the energy or heat-producing power of a feed is the therm, i.e., the amount of heat required to raise the temperature of 1000 pounds of water 4 degrees.

Available Energy, Net Energy.

The amount of heat evolved in burning a food substance does not necessarily measure its nutritive value to the animal since from the total fuel value of the feed the following losses must be deducted in order to determine the available energy:

1. Undigested food in the alimentary canal.

2. Gases due to fermentation in the paunch and intestines.

3. Urea, a nitrogenous compound which escapes through the kidneys.

From the available energy we must deduct a certain amount which is used up in the work of mastication, digestion and assimilation, in order to secure the net energy which the animal may use for the work of the heart, lungs and other internal organs, and in case any repairs after the maintenance requirement of the animal is met, it may be used in the production of milk. When 100 pounds of peanut oil is burned it yields 399 therms of energy. When fed, none of this oil passes into the feces or solid excrement as waste, all being absorbed by the small intestine and going into the body proper. No fermentation takes place and since there is no nitrogen present there is no nitrogenous waste in the urine. To digest and assimilate this 100 pounds of oil required 174 therms of energy, leaving 224, which might be stored in the body for the use of the tissues.

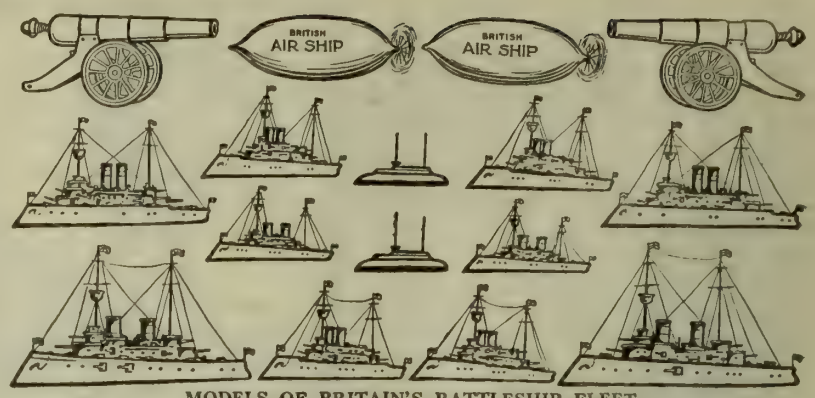
When 100 pounds of wheat gluten, which is practically pure protein, is burned, it gives off 263 therms of energy. No part passes away in the solid droppings, or in gases, but a large amount is carried away by the urine, this loss coming from the breaking down of protein nutrients within the body. This fact also explains why it is unprofitable to feed animals an excessive amoutn of protein. The excess nitrogen simply passes off with the urine and the animal gets no benefit therefrom. In all 167 out of 263 therms, in gluten are lost, leaving 95 therms, which may be used temporarily or stored in the body.

With 100 pounds pure starch we find that there is no loss in the feces nor urine, but that a considerable amount is lost by fermentation, the gas thus formed (methane gas and carbon dioxide) escaping from the body without being used for fuel. The total loss is 87, leaving 98 therms for the use of the body.

While the total fuel value of corn, timothy and wheat straw is not greatly different, yet a much larger portion of the energy in the roughage escapes with the excreta, so that a comparatively small amount is left for the use of the animal body. In terms of per cent we find that only 9% of the value of corn meal passes away with the excrement, while with wheat straw 54% of the fuel value is excreted, the total loss ranging from 58% with corn to 94% with wheat straw. The net energy that the animal can use is 41% with corn and only 6% with wheat straw. This explains why milk cows do not fatten up and at the same time give an abundant supply of milk when wintered upon straw; 100 pounds of wheat straw contains 10 therms of energy. A 1000-pound cow requires for maintenance and for 20 pounds of 4% milk 12 therms of energy. It is thus evident that the cow would have to consume over 100 pounds wheat straw per day in order to maintain her body and have sufficient energy left to produce 20 pounds of milk.

There are several objects to which the cow may devote her food: Maintenance, milk production, growth of fetus and gain in weight. Since the animal machine cannot be stopped, even when it is not in active use, it follows that a certain amount of food is constantly required simply to make good the wear and tear of the body. This is called the maintenance requirement. When a cow giving an average amount of milk, the maintenance requirement calls for about half the food value. Moreover, maintenance is an arbitrary requirement and cannot be decreased.

If insufficient food is supplied, the cow must use as much for her maintenance as when she was receiving a full ration and thus the decrease comes entirely on the portion that would ordinarily be devoted to milk production. When the dairyman has gone to the expense of supplying the



MODELS OF BRITAIN'S BATTLESHIP FLEET

GIVEN FREE TO BOYS

BOYS—Just think of owning twelve (12) beautiful models of the fine ships of the British Navy—two great Super Dreadnoughts, two Dreadnought Battle Cruisers, four Destroyers, two Torpedo Boats, and two Submarines—a veritable battle fleet. Just look at them. With them you get two dandy breach loading, trigger firing cannons that actually fire ammunition—peas, beans, or anything else you put into them, and two toy airships. You'll just get a barrel of amusement out of these fine ships, and they will surprise and interest all your friends wherever you show them. We have brought them for you all the way from Japan, where they are made by the clever Japanese. All the boats are fully rigged and painted in full colors. You'll agree that they're the finest models you've ever seen, and you'll soon devise all kinds of great games with them.

Just write to us to-day, boys, and get, postage paid, a free sample of **"Fairy Berries,"** the delightful new Cream Candy Coated Breath Perfume, together with just **25** big handsome packages to introduce among your friends at 10c. each. Open your sample package and ask all your friends to try a "Fairy Berry." They'll be so delighted with them that everyone will buy a package or two at once. No trouble at all to sell delicious "Fairy Berries." Everybody just loves them.

Return our money, only $2.50, when the breathlets are sold and you'll promptly receive the complete set of twelve model battleships, two cannons and two airships, exactly as represented. We pay all delivery charges. Hustle, boys. Don't miss this great opportunity. Address

THE REGAL MANUFACTURING CO. Dept. A 54 TORONTO, ONT. 35A

FOXES

Get "More Money" for your Foxes

Fisher, Muskrat, Lynx, White Weasel, Marten, Skunk and other Fur bearers collected in your section

SHIP YOUR FURS DIRECT to "SHUBERT" the largest house in the World dealing exclusively in NORTH AMERICAN RAW FURS a reliable—responsible—safe Fur House with an unblemished reputation existing for "more than a third of a century," a long successful record of sending Fur Shippers prompt, SATISFACTORY AND PROFITABLE returns. Write for "The Shubert Shipper," the only reliable, accurate market report and price list published.

Write for it—NOW—it's FREE

A. B. SHUBERT, Inc. 25-27 WEST AUSTIN AVE. Dept. C 200 CHICAGO, U.S.A.

Hundred-Cents-to-the-Dollar Money

will be demanded from you when you buy a piano. Why not, for your part, demand hundred-cents-to-the-dollar piano value? You are entitled to the full purchasing power of every dollar you spend—and you get it, when you buy a

SHERLOCK-MANNING 20th CENTURY PIANO

"CANADA'S BIGGEST PIANO VALUE"

Your money—$100 less of it—buys superior piano quality—an instrument containing the highest grade action, hammers and strings that money can buy.

Canadian families to the number of 1,200 bought Sherlock-Manning instruments last year, and each saved $100 by our direct-to-user methods and prices.

Let your cash buy all piano value. Not a dollar of it should be spent for a name only. We are willing and anxious to prove our claim to give "Canada's Biggest Piano Value"—a beautifully toned, handsomely cased instrument, backed by an unfailing ten-year guarantee—all for $100 less than you'll pay for the same value anywhere.

Ask Dept. 6 to send you our Art Catalogue J.

Colonial—Style 70

THE SHERLOCK-MANNING PIANO CO.

LONDON (No street address necessary) CANADA

maintenance requirement it is poor economy to withhold the other half of the feed that would be used for the production of milk. The function of maternity, however, is so strongly developed in the cow that she will continue to give some milk, even when the food supply is insufficient. The material for the milk thus formed is taken directly from the animal's body with a consequent emaciated condition of the animal.

In fact, the weight of the animal forms a very fair index as to the relation between food supply and milk production. The amount of milk a cow gives is usually in direct proportion to the amount of food she consumes over and above the maintenance requirement up to her limit to produce milk. If she eats more than this she gains in weight, storing up the excess in the form of fat, to be given off again when the food supply is insufficient. If she eats less, she either robs her body or decreases in milk flow.

Clover hay contains more than 2½ times as much protein as timothy hay and also more energy than timothy. In spite of its low feeding value, timothy hay is high in market price on account of the demand for it as a horse feed. This combination of low feeding value and high market price makes timothy hay a very expensive roughage. At the usual market prices timothy hay charges the feeder the enormous price of $45 for 100 pounds digestible protein, while clover hay furnishes a like amount of protein for only $14.80. Similarly, timothy charges $2.73 for 100 therms of energy, but clover only $2.29. Corn stover may be substituted for timothy hay to advantage since the stover is nearly equal in feeding value to timothy hay and at $8 per ton furnishes nutrients at a much lower cost than does timothy hay at $18. Corn silage, besides being a succulent, palatable feed, is at the same time an economical roughage, since it furnishes energy at the very low price of $1.18 per 100 therms.

When timothy hay alone forms the roughage, the cow will need about 20 pounds of it. In addition she must have two pounds of corn meal, two pounds ground oats, two pounds wheat bran and two pounds oil meal. This ration will cost about 31.7 cents. The man who has mixed hay can dispense with one pound oil meal and his ration will cost 28.8. With clover hay as roughage another pound of oil meal can be left out and we get a ration for 25.9 cents. With 30 pounds corn silage and eight pounds clover hay forming the roughage, there is needed to complete the ration two pounds corn meal, two pounds ground oats, two pounds wheat bran and one pound oil meal. We now have a ration that costs but 24.2. The dairyman who uses this ration will save in cost as compared with the first 7½c per cow per day. In a 40-cow dairy this would amount to $90 per month, and to $540 during the six months winter feeding season. This difference is brought about entirely by the character of the roughage. With the timothy hay ration the cost of feed is almost as great as the average price of butter throughout the year. The roughage, in fact, is the most expensive part of the ration. It is evident that when timothy hay forms the roughage there is only a narrow margin between the cost of feed and the market price of butter produced. Silage and clover hay, on the other hand are not only the less expensive roughage in themselves but do not demand so much grain nor so expensive a grain ration to complete the ration as does timothy hay.

We have found that corn silage and clover hay form a palatable, nutritious and economical roughage. A grain mixture made up of 200 pounds hominy or corn meal, 200 pounds cottonseed meal, 100-pounds distillers' dried grains and 100 pounds wheat bran is high in feeding value, low in the cost of protein and energy and contains sufficient variety to be fairly palatable. This mixture will serve to illustrate how a combination of economical roughage and an economical grain mixture will still further lower the feed bill. Let us make up a proper ration for a 1000lb cow giving 20 pounds of 4% milk, and for the sake of the dairyman who does not have clover hay, we will use mixed hay instead.

A Daily Ration

30 lbs. corn silage	$0.060
10 lbs. mixed hay	.085
2½ lbs. grain mixture	.072
Total	$0.217

This is 10 cents less per day than the timothy hay ration and would mean a saving for six months' feeding in the 40-cow dairy of over $700. The greatest efficiency at the least cost should be the aim. Proper feeding is desirable, but kindness and good care are just as essential to large milk yields. Furthermore, good cows are just as essential as are proper rations. Neither can give the best returns without the other.

What a shame and a disgrace it is to feed good hay, silage and grain to a scrub cow that will not repay the market price of the feed given her. Good cows, good feed and a good dairyman are a winning combination but "the greatest of these" is a good dairyman. No matter how well balanced the ration may be, it is of little value unless fed by a well-balanced dairyman.

Many cows are now kept at a loss that would transfer their balance to the credit side of the ledger if they could simply exchange owners. Good judgment must be exercised in the selection of feeds that will maintain the health of animals, provide a palatable table, nutritious and economical ration and produce a liberal flow of milk.—New England Homstead.

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Pig Notes.

Many persons seem to think that pigs cannot be over-fed, and that it makes no difference if they do leave a lot of food at one meal—they will come back and eat it when they are hungry, so that nothing is wasted after all. But it is easily possible to go to either extreme—to feed too little, so as not to secure a steady gain, or to feed too much, and so increase the cost as to lessen the profits. Feeding an economical plan, is to feed regu while fattening, all they will eat up clean. They will keep healthier, and thrive better, than is possible by keeping food before them all the time. It is what the animal digests, and not what he eats, that determines the gain in proportion to the amount of food supplied. Food left over is, to say the least, distasteful to a pig, while if food is soaked too long before feeding, it will become so sour as to be unpalatable; it should, however, be slightly sour, but any excess in this direction is not to be recommended. The pig ,when growing or fattening, most benefit from it, and he will hardly do this if he eats what he wants, obliged to come back and finish it up. This is not economical, and, when the margin of profit is small, the waste of feeding in this way will greatly lessen, if not entirely cut off, the possible profit. It is an important item in management at all times to feed stock well, and fattening stock should have all that they will eat clean, and be supplied with a variety of foods, in order to secure as good a growth as possible.

Killing and Curing

A pig that is to be kiled should be kept without food for twelve or sixteen hours. Every effort should be made to get every drop of blood out of the body, otherwise the carcase will not cure so well. The pig is next immersed in nearly boiling water. The temperature of the water is very important. If it is either too hot or too cold the hair will not come off freely. A good old-fashioned plan is to try the temperature by letting a few drops of the pig's blood fall into the water—if it spreads over the surface the temperature is right. Leave the pig in the water until the hair comes off freely. Pigs are not easily lifted out of the water, especially when hot, and it is a good plan to erect a block overhead so as to facilitate the operation. The pig should now be vigorously scraped with a blunt instrument, and there is nothing better for the purpose than the lid of an old tea kettle. When the hair is all removed the skin should be well dried. The inside is then removed in the usual way, and the inside wiped with a clean cloth. The pig should then be allowed to hang in a clean, airy place for twenty-four hours. It is then cut up into hams, hands, spare-ribs, loins and belly pieces. The spare ribs and loins are generally used for roasting fresh. The other portions are rubbed over with coarse salt and a little saltpetre, and laid on a table, flesh uppermost, so as to drain off any blood. The system of dry salting is to be recommended, as by this system the bacon is so so flabby as when steeped in dry process, equal quantities of salt and brown sugar are used, with ¼ oz. saltpetre to each pound of the mixture. This is thoroughly rubbed into the pork every second day, and the position of the meat changed at each rubbing, that is, the top portions put at the bottom, and vice versa. The time required for finishing the bacon will depend upon the size of the pig and the state of the weather. The salt goes into the meat more quickly in wet than in dry weather. The place for curing should be cool, with a free circulation of air. From three to four weeks will be required for the curing of a good sized pig.

Fall Cleaning of the Truck Garden

In the control and prevention of plant diseases sanitation of the garden is important. There are a number of our fungus diseases which rest over the winter on or in decayed stalks, leaves, or fruit. The resting stage of the fungus is resistant to winter conditions. Among such diseases which rest over in the above manner are:

Club root cabbage, onion mildew, leaf spot of strawberry, leaf spot of beets, early blight of celery, late blight of celery, and asparagus rust.

If a disease is not destructive one season, it is no sign it will not be another season. Rake up and burn the old stalks, leaves and fruit left in the garden patch.—W. W. Robbins, Colorado Agricultural College, Fort Collins, Colorado.

Using Sulphur as a Disinfectant.

When preparing a building for fumigation with sulphur move the animals out of it, and also such metal goods as are movable, but it is a great mistake, although a common one, to sweep and clean down the building before fumigation, as this tends to the spread of both vermin and disease germs, by stirring them up and distributing them about, before being subjected to the fumes or poisonous gas. The windows and ventilators should be carefully closed and stopped up, so that fresh air, which would dilute the gas, is not admitted. The contained air in the building is usually sufficient to secure complete combustion of the sulphur. There are several ways of burning the sulphur. One is to place a large tray or bath in the centre of the building with a few inches of water in it, and stand it on a couple of bricks, an old iron saucepan or small zinc bucket. Break up roll sulphur into tolerably fine pieces, and drop a few lighted matches or some red hot coals on to it, and when it is seen to be well alight, leave the building quickly, and lock the door—personally retaining the key. Another plan is to set up a brazier of charcoal or a tinker's fireplace, and place the broken roll sulphur over the fire on a stout seet-iron tray. In the case of large buildings it is well to have several centres of combustion, dividing the sulphur into two or three parts, and burning them simultaneously. The quantity of sulphur recommended to be used is 1 lb. of roll brimstone for every 1,000 cubic feet of air space. The way to calculate this is to multiply the length of the building by the breadth, and the result by the height, in feet, and divide by 1,000. Before

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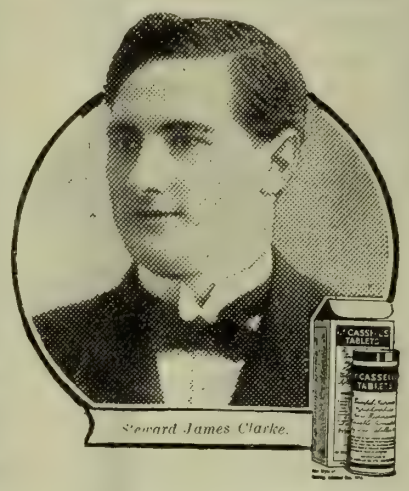
Saved from the Lusitania

Steward Who was Picked Up Unconscious describes his experience.

So Nerve Shattered His Friends Hardly Knew Him.

Now, Restored to Vital Strength by Dr. Cassell's Tablets, He Sends Letter of Thanks and Praise.

Mr. James Clarke, of 12, Kew-road, Birkdale, Southport, Eng., a Steward of the Lusitania, was attending to his duties below deck when the German torpedo found its mark, and in sixteen minutes sent the superb vessel to the bottom. Then began his terrible struggle for life. With many others he managed to catch hold of a drifting box and cling to it. Hour succeeded hour, and one by one as their strength failed his companions were carried away on the surge of the sea. At length only he and one other remained, then he alone. After that unconsciousness. The last thing Mr. Clarke remembers is a vision of smoke on the far horizon. As it proved this was the smoke of a rescuing vessel, which picked him up just in time.



Steward James Clarke.

It will easily be understood that such an experience must shatter the strongest nerves; and so it was with Mr. Clarke. But on recommendation he took a course of Dr. Cassell's Tablets, and now he sends us a personal letter in praise of that great remedy. He says:—

"Dear Sirs,—Just a few lines to thank you for the grand benefit I have received from Dr. Cassell's Tablets.

"I was on the Lusitania when she was torpedoed on May 7. After floating about on a box for four and a half hours I was picked up in an unconscious state by a rescue-vessel and taken into hospital.

"You will quite understand that my nerves were in a dreadful state after the terrible shock. My appearance was so changed that friends who came to meet me on my arrival at Birkdale did not know me.

"To cut a long story short, Dr. Cassell's Tablets have worked wonders in my case, and I am now feeling fit and well. You can publish this letter along with my photograph if you care to do so, for Dr. Cassell's Tablets are really an excellent nerve tonic.

(Signed) "James Clarke."

Dr. Cassell's Tablets

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Nerve Paralysis	Anæmia	Wasting Diseases
Spinal Paralysis	Kidney Disease	Palpitation
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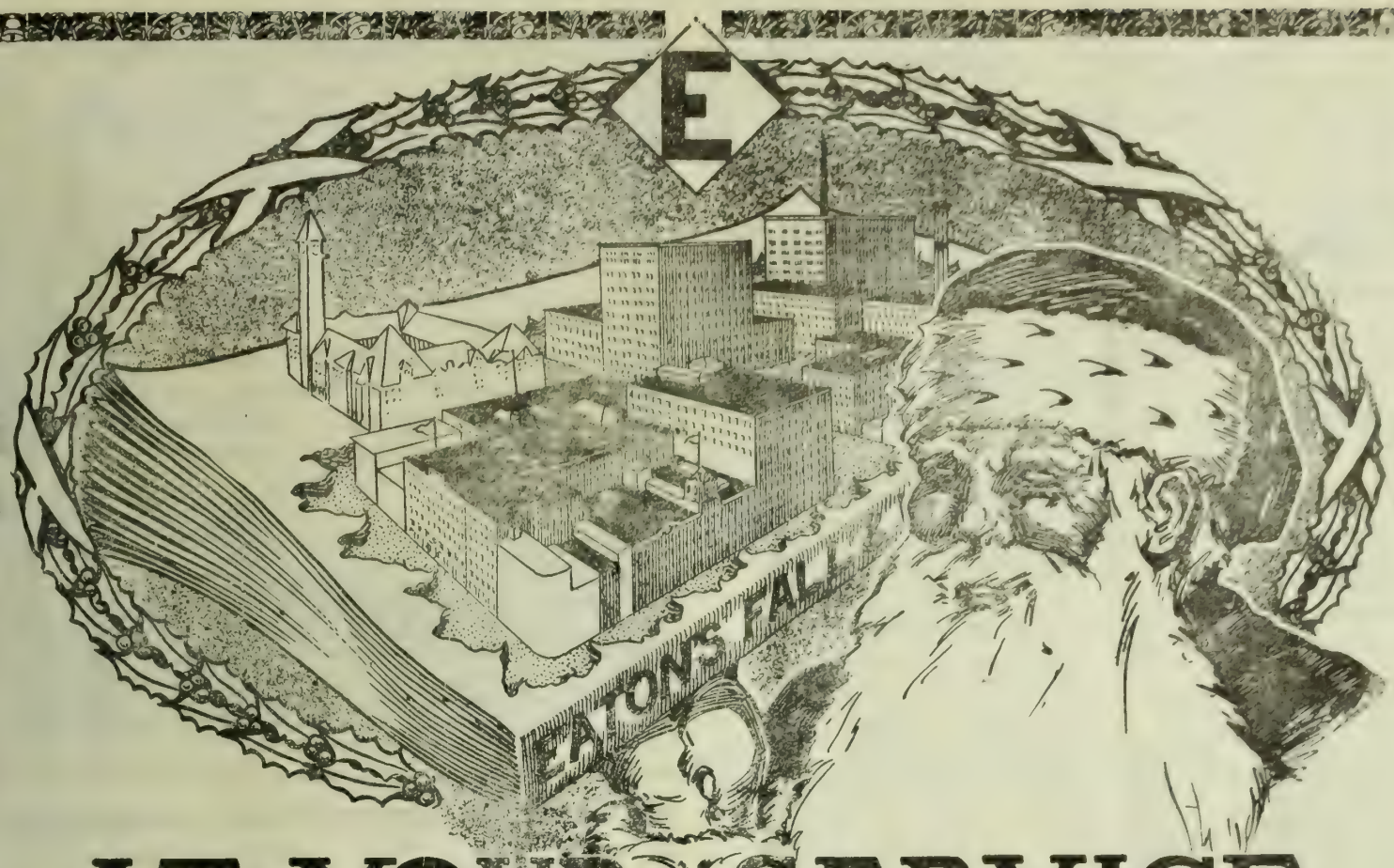

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SEND TO-DAY FOR OUR FALL AND WINTER CATALOGUE

THE T. EATON Co LIMITED
TORONTO CANADA

starting the sulphur burning, have some paste and strips of paper, and, when outside, paste up cracks in the door, and around window frames that are ill-fitting. The great thing is thoroughly to saturate the atmosphere contained in the building with the sulphurous fumes, and to keep the place shut up for some hours. Eight hours is the period recommended by sanitary experts, but in the fumigation of stables and agricultural buildings it is generally the best plan to start the fumigation in the late afternoon, and leave the sulphur to burn out, and the building to remain hermetically sealed until next morning. Needless to say that, as gaseous disinfectants destroy parasites and bacteria, and their presence in any quantity is incompatible with the existence of human or other animal life, the building must afterwards be thoroughly ventilated. The best plan is to throw open the door, quickly open the windows, and unstop the ventilators, and leave the place until the air is quite clear.

Keeping coal slack and salt in front of the hogs even when they are on good pasture is advisable. Care should be taken when these ingredients are first fed, as the hogs not infrequently eat larger quantities than are beneficial. Some cases of loss as a result of over-eating salt and impaction of cinders are reported. Death usually follows before the animals are discovered to be sick. Ordinarily, however, there is no danger in feeding salt and coal at will, once the hogs become accustomed to them.

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Growing the Potato Crop.

(Continued from Page 77)

two hours, then dried, and cut for seed. As the spores live in the ground for several years the treated seed should be planted on land that has not produced scabby potatoes for several years.

Digging

If potatoes are not diseased they should be dug as soon as the tops die down, while if they have been killed by blight they should be left in the ground as long as possible before digging.

For large growers the potato digger is a necessity but where small fields only are grown the potato hoe or fork are used for digging.

Storing

Each farmer must decide for himself whether under his particular conditions it will pay best to market the potatoes at the time of digging or to store them. Storing should be done in a cool, dry, well ventilated cellar which is perfectly dark.

Idle Stallions Not Profitable.

Idle stallions are usually not very profitable. This is the conclusion one is sure to draw from a knowledge of the stallion business. There is too much work in caring for the idle stallion and too little income from him Frequently he is not very sure as a breeder. Except in the breeding season he is usually neglected to such an extent that unsoundness develops or bad habits are formed.

Work is the remedy. Farmers who own stallions have been the first to put this principle into practice. Without precedent for working draft stallions in this country they were slow to undertake it. Yet it is unseemly for an enterprising farmer with much need work to be done to have a big, strong horse idling away his time day after day.

It has usually been found that stallions are the very best of workers. They are strong, quick, alert and courageous. The work keeps them in fine physical trim. It occupies their minds and steadies the nerves so they are more readily controlled and cared for. When a stallion is working he gets good care as a matter of course, and that is what he needs. There is no extra expense about it and no hours wasted leading him along the road for aimless exercise. The working stallion is so cheaply kept, so easily handled and so sure as a breeder, that farmer who is fairly successful with horses can conveniently keep a sire. This fact is resulting in a gradual transfer of the stallion business from the professional owner to the farmer. It tends to encourage the keeping of a larger number of stallions for breeding purposes.

Treating Wire Cuts on Horses.

Don't apply axle grease or similar ointment to a barb wire wound on a horse. First wash the wound with warm water, clip the hair closely around it and then wash again. Never use a sponge to clean out foreign material lodged in a deep cut, but use a piece of absorbent cotton or cotton-batting. This is not so likely to cause infection. It is useless to put stitches in a deep or ragged wound or one that is located in a place not in rest while the animal is moving. A dry dusting powder consisting of equal parts of slaked lime, sulphur and charcoal has a healing effect on wire wounds and similar cuts.

The danger from nail wounds or other punctured wounds is lockjaw. Open up such a wound freely so that the pus drains out and saturate with a solution of corrosive sublimate and water in proportion of one to 500. Cover with dusting powder, absorbent cotton and a bandage and repeat the treatment daily.—Dr. A. S. Alexander, Wisconsin Agricultural College.

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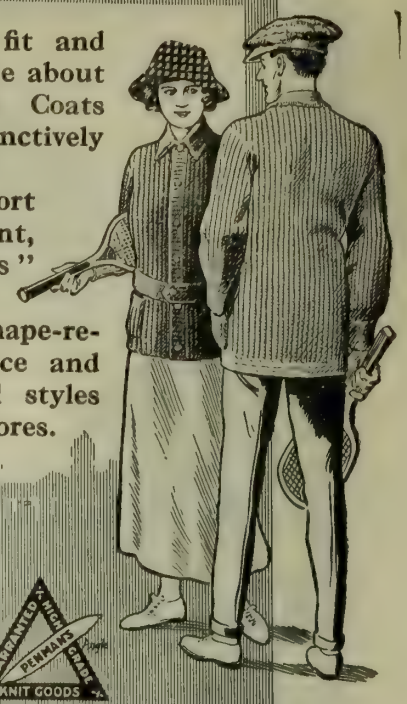

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Pure Bred Ayrshire Stock.

1 Cow 4 years, 2 Cows 3 years, 1 Heifer 20 mos., 1 Heifer 9 mos., 1 Heifer Calf 3 mos., 1 Heifer Calf 2 mos., 1 Grade Heifer 18 mos.

These are all choicely bred. Mostly decendents of Barcheskie Kings Own. They are all in fine shape and I will give you a bargain to buy the lot. Come and see them—Stables near the station.

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Shropshire Sheep
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Cockerels, $1.00 each; Trios, (cockerel and 2 hens), $3.00; A few Leghorn Yearling Hens, 75c each; some late Leghorn and Rock Pullets, $1.25 per pair.

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Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

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To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

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Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

Importance of Veterinary Instruction.

Veterinary science, in common with other branches of education and instruction, is rapidly advancing in recognition, exactness and unsefulness. For many long years it was neglected and ignored, both in the new and old lands. Approaching the middle of the last century there came an awakening and in England royal patronage was extended and the Royal College of Veterinary Surgeons was established, or rather came into existence by consolidation, for from 1791, there had existed schools in which the health and mending of animals received attention. It was the consort of good Queen Victoria, Prince Albert of Saxe-Cobourg Gotha, who of royalty first manifested an interest in veterinary science in the motherland, and rendered immense service in helping to remove the seeming reproach and stigma conveyed in the phrase once often heard: "He is only a horse doctor." In the year mentioned, that is in 1791, the English veterinary college, still doing its good work, was established in Camden Town, London. In 1865 the Albert Veterinary College, named in memory of the late Prince who died four years previously, was opened and then came the Royal College of Veterinary Surgeons, and today the much cherished, valued and rare title of Fellow of the Royal College of Veterinary Surgeons. In passing it might be suggested that "veterinary doctors" or "physicians" would be more appropriate and indicative, for bone-mending or curing by incision, forms but a small part of the duties the modern animal doctor is called upon to perform, even though bone-setters of the lower creation have proved of exceeding usefulness in practicing their swill upon the higher order.

A long time prior to the establishment of the Albert Veterinary College, the College at Edinburgh had been fulfilling its noble mission, and it was from that institution tha veterinarism in Canada received its early seed. It was from there came the late Dr. Andrew Smith, founder fifty-three years ago of the Ontario Veterinary College. That was the beginning of recognized veterinary instruction in this country. The first class was very small, only three young men having the spirit and intelligence at the time to recognize that the doctoring of animals was not a haphazard, but an applied and practical science. From that time the growth of that recognition has been gradual, but it is to the credit of Canada that it has been more insistent and vigorous than in older lands. Almost from the first the provincial government of Ontario displayed helpful interest and thus materially aided in the development of the struggling but inestimably useful and valuable institution on Temperance Street, Toronto, where the early foundations were laid and which grew in time to inhabit a building of size and importance. In Quebec, too, the advance in veterinary knowledge has been equally significant, but of later origin. When, however, some energetic, learned men did come to the front in the eighteen eighties progress speedily followed until today French Canadian students have at their disposal in connection with Laval University facilities on a par with those that their fellows of English extraction are privileged to posses in Ontario. In the time to come it is not difficult to believe that elementary veterinary education will receive much wider attention and occupy at least a minor place in rural schools.

Of the importance of veterinary science, of the health of live stock that contribute, in rivalry with the instant productions of the soil, to the welfare of humanity there can be no over-estimation. There is perhaps no greater vehicle for the conveyance of the disease germ under neglect than the domestic animal—the creature of one kind that we pet and another that we devour. We caress and hug the dog and cat, we associate with and utilize the horse, and we eat cattle, sheep and swine. They all in their way, if understood and well-cared for, afford health and comfort. If neglected, the life they yield and are intended to yield to mankind, they confer with equal ease upon pests that deal widespread destruction—that disseminate ills of a numerous, various and complex nature, and of an order that is more deadly and universal even than war. It is to cure, check or suppress this tremendous evil begotten of a blessing vastly beyond estimating that is the object and aim of veterinary science that the governments of Canada, both federal and provincial, are bending their energies to combat, and that means much, perhaps more, to the well-being of the nation as any branch of sanitation, yes, and as any branch of production.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

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Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls, 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

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Splendid exhibition Cockerels and Pullets—a large number—in both varieties for sale at right prices. Send for one or more of the kind that can win at The Maritime Winter Fair next month

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Magnolia Avenue Poultry Yards
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A Handsome Black Gelding, fearless andkind, with lots of speed, (trotter), a good show horse and a nice roadster, safe for a lapy. Apply to

MRS. A. M. WILSON, Erskine, Dartmouth, N.S.

FOR SALE

20 S. C. R. I. Red Cockerels at $2.00 each. 20 S. C. R. I. Red Pullets at $2.00 each. Also a few R. C. R. I. Red Cocks, Hens, Cockerels and Pullets.

W. H. Henry, - Shubenacadie, N. S.

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We are offering for sale the following stock to make room.

2 Hereford Bulls, 10 and 13 months; 1 Hereford Bull, 3 years; 1 Hereford Heifer 2 years. Registered stock and true to type. 12 Berkshire Pigs, eligible for registration; 25 White Wyandotte Cockerels; 1 Draft Horse 4 years old weight 1240 lbs. Write for further description and price.

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WANTED—LADIES TO DO PLAIN and light sewing at home, whole or spare time, good pay; work sent any distance; charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY. Montreal.

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Volume 21. SUSSEX, NEW BRUNSWICK, NOVEMBER 23, 1915. Number 4.

Soil Sense--Suggestions on Soil Treatment

Preparing the Seed Bed

The problems of the soil are the most important problems of the nation. Their successful solution means food, clothing, and the necessities of existence for the people. They call for knowledge and training as great as the problems of business and science, in fact, farming is today both a business and a science to which the best minds of the country are devoting their attention.

Modern systems and methods have contributed and will contribute wonderful things to the farmer, but the farmer who makes the best of these newer aids must not lose sight of the older principles that common sense and experience have taught him.

Digging for the Truth

For the man who is a thinker there is no better way to learn about soils and crops than to get out in the field and dig for the truth.

Some day in midsummer go out in the thriving field and take your shovel with you. Pick out a vigorous hill of potatoes and dig down in the earth beside it. Perhaps you can use your hands a little too to scoop the dirt away and lay bare the roots that you know are the life of the plant above.

Do your work carefully and think as you go for there before you lie the big facts that are the key to all successful farming. The ground is fairly alive with the tangle of lacy roots reaching for many inches in every direction. The root system of a plant is one of the most intricate and wonderful things on the farm, yet how many farmers ever take the trouble to unearth it and study it at first hand.

You need not be a scientist to know that it is these roots reaching out through the soil that enable the plant to live; you need not understand the complicated chemical changes that occur in the plant. The thing you are interested in is that through these millions of roots the plant absorbs plant food, taking out of the soil elements it requires for growth.

You know, too, that before the plant can take up these elements they must be dissolved in water, hence the need for plenty of moisture in the soil.

These two common sense lessons that you have learned in the field are the basis of all that is known of plants and soil culture. Reasoning from them you can make your own rules and theories regarding the proper treatment of soils and cultivation of plants.

How Roots Grow.

Go back in your mind a few months ago to the time when the potato sets were first planted. Perhaps you have seen seed corn sprout in a saucer with a moistened cloth over it, and you know that it sprouts in the same way when it begins to grow in the ground. The first sprouts are soft and tender—anything but strong, yet they are the beginning of that tangle of roots that you see issuing in all directions from the grown plant. Those tendrils that are broken by even the touch of your finger must push their way through the soil in and around the particles, continually extending themselves, getting into new feeding grounds and sending up food to the plant. The roots must strike downward, too, because the surface soil dries out quickly in summer weather and the roots soon die. The deeper down the roots go the nearer they get to the moisture in the subsoil, and the better they withstand the drouth. What then must be the condition of the soil in order to give these roots a chance to do their work?

Childish question, you will say, perhaps! Yet, how many of us know the answer are guided by it when we are actually in the hurry of preparing the soil for seed?

Certainly roots cannot grow at their best unless the soil particles are pulverized, crushed and made as fine as possible throughout the whole surface as far as those roots grow.

Suppose the soil is left in lumps and clods. What happens to the growing roots? They cannot go through the lumps, but must grow around them, and waste energy and time doing work that does not help but hinders the plant, and stunts its growth.

A noted farm authority writing for Wallace's Farmer says:

"A clod contributes nothing to plant growth so long as it remains a clod, for the simple reason that plant roots can not penetrate it. These clods allow too free access of air, and the land dries out. Hence the man who allows his land to get cloddy through bad cultivation invites a crop failure, which will not wait for a second invitation."

No good healthy root system can be established in a field that is not finely pulverized to a considerable depth, depending somewhat on the soil conditions and the nature of the crop to be planted.

Roots need fine soil in order that they may fine their way through it easily, but that is not the only reason. Going back again to our common sense line of reasoning, roots get plant food from soil and in order to get this food they must come in contact with the soil. As a matter of fact the scientist would tell us that each particle of soil is coated with water, and in this so-called soil water the plant foods are dissolved. The more of these particles of soil that there are touching the root the greater quantity of this soil water the plant can take up. If lumps are coarse the roots cannot come in contact with so many of them, and will not be so closely surrounded by the soil particles.

In coarse and lumpy ground, perhaps half the length of the root will be wasted so far as feeding the plant is concerned. The root winds it way in the big air spaces between the clods.

Roots grow better in fine soil and they also help to make the soil finer. All plant roots have a certain chemical action on the soil, tending to break it into finer particles and to make it mellow.

A well known farm paper editor suggests an experiment made by taking two common glas tumblers, placing three kernels of corn in each and in one a handful of finely pulverized soil, in the other a soil full of lumps.

If these tumblers are then placed out doors where they can receive the rain and sunshine the difference will be quickly seen between the fine seed bed in which the roots are closely surrounded by soil and the coarse seed bed where the roots are getting no plant food.

If you could look through a pane of glass and see things working underneath the surface in your field, you would notice these conditions and you would know at once how to remedy the trouble. First you would make the soil finer, then to bring it in still closer around the roots you would press and pack it firmly, thus getting the roots and soil closely together.

Your observations in the field have taught you these two things; that soil should be finely pulverized, and that it must be firmly packed and pressed together. There is no question but that farmers realize this. The difficulty is that they do not believe the work can be done in a reasonable length of time, and they think while such things are theoretically good it is practically impossible to obtain such conditions.

Proper methods and farm implements have decreased the labor of preparing the seed bed. Actual demonstrations without number, by different experimental stations, have shown that one acre rightly prepared will yield more than two acres seeded when in poor condition. It of course requires more energy to prepare it properly, however, it is time well spent. You have but the cost of seed for one acre and the cultivating requires only one-half the time. The other acre of land can well be used for other crops.

Making a Fine, Firm Seed Bed

To secure soil of the proper texture and fineness, we must begin with the plowing. Much depends on doing this correctly, for instance certain clays when plowed wet will puddle, and become so hard and lumpy that no amount of work can get them in shape for planting in one season. The correct time for plowing and the manner in which it is to be done is a study in itself. It depends upon the territory, upon the soils, the nature of the crops, and many other conditions.

Once the field is properly plowed, the work of obtaining a fine seed bed is well begun. For years the accepted method has been to follow the plow with a harrow. This is a good implement as far as it goes, but it does not go far enough. The best it can do is to scratch the surface to a depth of three or four inches, and on some soil it will pulverize the lumps very fine to this depth. The farmer realizes that it does not work deep enough, and often adds rails, stones or other weights to make it cut deeper.

The spring tooth harrow is in some ways a better implement. It pulverizes the top and also digs deep down and brings up lumps from the bottom of the bed. The truth is, however, that no implement which cuts or drags through clods and lumps can entirely pulverize them. The teeth or edges on such an implement hit one lump and miss the one next to it, or simply cut the lump into two lumps, when it should be reduced to particles.

Walking into such a field, you have no doubt tested the soil by striking the lumps with the heel of your boot, and thus crushing them into a thousand bits. That is just the sort of work that must be done by an implement in order to put the field in proper shape.

Soil Moisture

You concluded from your observations in the potato field that moisture is necessary to the growth of the crop. Figures show that to produce one ton of dry matter in corn stalks 271 tons of water are needed, and to make one ton of dry mattter in oats 504 tons of water are needed. In some few territories of course there is no trouble in getting the right amount of water, in fact it is a problem to get rid of it, but in 90% of the farming territory the ground becomes very dry at least during the months of July and August.

With most farmers therefore the problem of saving moisture in the soil for dry months is one of the most important things they have to deal with.

If you will find a field in which the crops are growing well in spite of drouth, you may obtain from it some clue to the manner in which moisture may be saved. Dig in such a field and at a depth of three or four inches you will find moisture even though there has not been rain for weeks.

How did the moisture get there and how has it kept in the soil through a long dry season?

Storing Moisture in Soils

Soil moisture of course comes in the first place from rainfall. Some of the water soaks into the ground and the rest evaporates. That which evaporates is lost and generally enough is wasted in this way to save the crop if it could be kept in the ground and used. If you live in some sections you find that there is often so much mois-

ture that you are glad to get rid of it in the spring, but by proper methods and with soil in the right condition this moisture can be stored and made use of instead of being allowed to evaporate and become lost.

On lands where there is too much moisture in the spring, drainage will take care of it in a way that will be beneficial for the crops. It is better to drain the water away through the soil than to allow it to evaporate because drainage carries the moisture downward instead of allowing it to dry out slowly, and thus form a wet and soggy surface. As the water goes downward toward the drain it tends to make the roots strike downward rather than to grow upward toward the surface, as they will when the surface is wet. Surface feeding roots soon die when drouth comes, and are of very little value to the plant. The deeper the roots can be made to grow the nearer they get to the stored moisture and the better they withstand dry seasons.

In the saving of moisture much depends on the plowing. The depth of soil has a pronounced effect on the way in which the soil retains the moisture. In fact, unless deep plowing is practised many of the best authorities on dry farming maintain that no amount of subsequent cultivation can bring the moisture in the subsoil up to nourish the roots. In some cases subsoil is gashed deeply with a plow made for the purpose in order to loosen it up and make it suitable for receiving and storing large quantities of water.

In the so-called "dry farming" country this question of storing moisture is naturally given the most careful attention. Prof. Ten Eyck of the Kansas Experimental Station says:

"That most important part in soil moisture conservation, the most important factor in dry farming, and the one which has been most greatly neglected by our farmers is getting the rain water into the ground and safely stored or conserved in the subsoil, where it may be drawn upon by the growing crop. The firming and pulverizing of the soil to restore capillarity and the cultivation to maintain the soil mulch are each without avail unless there has been stored in the deeper soil a sufficient amount of moisture to support the growing crop in time of a drouth."

If newly plowed land is left for two or three hours on a day when there is sun and wind, the ground will lose the equivalent of two or three inches of rainfall.

On this point Prof. Bedford of Manitoba Agricultural College says in a bulletin:

"If the newly plowed furrows are allowed to remain as left by the plow for any great length of time, particularly during hot windy summers, a large amount of moisture will evaporate. For this reason the plow should be followed closely by the soil packer. In fact, every day's plowing should be packed before night. This will press the soil closely together and check evaporation at once. Soil will always pack together more firmly when freshly plowed. The following striking results were obtained from the Brandon Experimental Farm in 1914, The average yield from four unpacked plots was 45 bushels of wheat per acre. The average of four adjoining packed plots was 52 bushels and 55 pounds per acre, or seven and a half bushels more than unpacked.

The plow should be followed directly by the culti-packer. The cultipacker will pulverize the top surface and make a mulch, leaving the soil in condition to retard evaporation until the seed bed can be completed.

Land which is plowed in the fall and then gone over once with the Culti-Packer, is left in condition to absorb great quantities of moisture from winter's snow and rain. This moisture seeps down through and is stored in the subsoil. Says J. M. Neale in an article in the Scientific Farmer:

"We could not always get the necessary spring rains to put our lands in proper condition, but often the fall and winter rains are quite sufficient. Let us store them as they come for one inch of rainfull stored in the fall or winter is worth two or three inches in the spring and summer Then we do not always get them in the spring when we want them."

Care in the tilling and preparation of soil is necessary in order to have the moisture there for later use.

Getting the Stored Moisture to the Plant

With the moisture in the soil the work is only begun. The next thing is to get the water to the plant roots at the time when it is needed, and when the rains fail to supply it. You perhaps have noticed foot prints, in a dry field early in the morning. They are dark and moist even though the rest of the field is dry as dust. The explanation of this is that moisture has risen through this soil because it is packed more closely than that around it.

You can illustrate this action of the water by taking a lump of sugar and dipping one end of it in the coffee. The coffee will rise rapidly through the whole lump.

The liquid rises through the lump of sugar because the particles are closely packed together. The same condition is found in soil which has been firmed by going over it with the right kind of an implement. If the sugar were loose, granulated sugar, the moisture would not rise through it. Neither will moisture rise through soils that are loose and open.

Take a small glass tube, such as a thermometer tube and place one end of it in water, and you will see the water rise in the tube above the level of that outside. The rise of oil in a lamp wick is another familiar example of this same principle. The soil is in reality made up of a number of little tubes or passages, and the closer the particles are together the smaller these passages are, and the more rapidly this moisture rises through them. This is called capillary action and is that which must be depended on to bring moisture from the reservoirs below up to the plant roots in time of drouth.

Large Air Spaces Prevent Moisture Rising

There are several things which will prevent this desirable rise of moisture if they are not guarded against. As the furrows are turned over in plowing the furrow slices do not turn completely over against the bottom of the furrow, they stand a little on edge leaving air spaces in between the slice and the furrow bottom. This can be seen by digging down across the furrows in a newly plowed field with a shovel. Often the grass or stubble of the field can be seen in these cracks, and these dry up and remain there instead of decaying as they would if closely packed in the soil.

Then when water begins to rise from the subsoil it will come up to this gap and stop there, and the roots above will die for lack of moisture. The only remedy for this condition is to get the furrow slice packed down in close contact with the bottom of the furrow. This should be done directly after the field is plowed, making a firm continuous bed of soil for the water to rise through.

The only satisfactory way to do this work is to apply a weight heavy enough to bring the furrows down into place.

The Culti-Packer is the most successful impelment for this work. It is heavy enough to make the most stubborn soil yield. The weight is not spread over a large surface but the edges of the wheels cut down through the top of the plowed field and bring packing action to bear down near the open air space, thus closing up all such spaces evenly. The trash and stubble then is packed in with moist earth and soon decomposes and becomes a valuable fertilizer in the soil. Thorough culti-packing directly after plowing will do more to prevent drying out of soils than any other work the farmer can do. Lumps and clods down in the seed bed have nearly as bad effect in retarding moisture ts the large air spaces, as they do not allow the upward passage of moisture so readily as the finely pulverized particles.

How to Stop Evaporation of Moisture

In packing the soil to bring the moisture up there is one difficulty. Moisture to be of value to the plant must remain about the roots. If it comes to the top of the soil as it does in the foot print, for instance, it will be lost. If we pack the top of the field perfectly smooth moisture will rise clear to the surface and be evaporated by the wind and sun. This evaporation is ordinarily prevented by stirring the surface of the field and thus making a mulch of dry earth over the top, thus it is necessary in using a smooth roller to follow it immediately with a harrow or cultivator to stir the surface.

This may be well illustrated with our experiment on the sugar lump. If you sprinkle a little sugar over the top of the lump with a spoon it will be found that the coffee when it rises to reach this point will take considerable time to pass through this loose sugar. This is the principle of the mulch in saving moisture.

The culti-packer performs the work of both the packer and the cultivator, and makes the extra cultivating unnecessary. The wheels pack the soil beneath the surface, making a layer of firm earth at a depth of three or four inches, so that the water rises to this firm earth and remains in the soil about the roots. At the same time the surface of the soil is worked and stirred by the two sets of wheels making the mulch which prevents evaporation. The culti-packer makes this mulch at the same time that it packs the soil thus saving the moisture that would be lost between the time of rolling and harrowing.

Dr. Taylor in his book on Soil Culture devotes considerable space to the important question of saving soil moisture, saying among other things:

"Moisture is conserved or prevented from escaping through surface cracks and insect holes by maintaining a soil mulch blanket on the surface. The culti-packer forms a retaining mulch and at the same time packs the soil about the grain roots. This implement can be used to good profit even when the grain is beginning to joint."

If soil is allowed to form a crusted or baked surface it very rapidly loses all its moisture to a depth of many inches. Cracks open up in the soil and form regular chimneys for the escape of the moisture. This hard crusted top surface is also a good conductor of heat and will carry the sun's heat down to dry up the moisture where if the surface were loose and pulverized it would form a non-conductor to retard the heat of the sun's rays.

In dry weather occasional work in the field with the cultipacker will bring to the roots every available drop of moisture, thus nursing them through drougths that would otherwise prove fatal.

Starting the Seed Right

There is no question that starting the seed well has a great influence on the later growth of the plant. It used to be common practice especially in garden planting to soak seeds a little to soften the outer envelope, and to start the sprout before they were planted. We can obtain practically the same effect by proper teratment of the soil when the seed is planted.

Strangely enough, packing the soil after seeding has never been thoroughly appreciated. A writer in Pacific Farmer states:

"The rules for securing water for our cultivated plants are well known, though for the most part not much observed in the United States. Use the packer after planting in order to make the soil firm and to assist the seed in getting the moisture from the lower layers of soil by means of capillarity."

Prof. Ten Eyck of Kansas Agricultural College says in one of his practical articles:

"To secure the ideal condition for seed germination and plant growth, a seedbed for planting small seeds should not be too deep and loose. The soil should be mellow and well pulverized but below the depth at which the seed is planted, it should be firm and well settled, making a good connection with the subsoil, so that the water stored therein may be drawn up into the surface soil and supply moisture to the seed. The loose, deep seedbed is almost wholly dependent upon rains for sufficient moisture to germinate the seed and start the young plants. In such a seedbed the crop is more apt to 'burn out' in summer or 'freeze out' in winter, than a crop grown in the 'ideal' seedbed described above."

You perhaps have observed that wheat or other grains will often grow higher at the ends of the field where the horses turn when drilling planting or cultivating. The weight of the machine and the horses' hoofs firms the soil about the seed and thus it gets the start of that in the rest of the field. Wagon tracks can often be traced in a field for the same reason.

As mentioned before the culti-packer is an ideal tool to precede the drill, as the drill wheels will cut through the loose surface left by the culti-packer, and plant the seed bed down in the firmer soil, leaving the loose soil on top to act as a mulch in retaining the moisture. This produces a condition which could not be excelled even by the most careful hand gardening methods.

Sunflower Seed in Grain Ration.

We grow quite a few sunflowers. Will you kindly inform us how to feed them to fowls or what other use we can make of them? We have taken this magazine for several years; it has been a great help to us.—B. J.

Although rather expensive, sunflowers are chiefly grown for their seeds which are fed to birds and poultry. In Europe and some parts of the United States the seeds are a source of oil, while occasionally the green stalks are made a part of the silage mixture. The seed is given to poultry just as it comes from the flower, or crushed so that the fowls may consume the white, meaty part alone. Fowls in poor condition seize the unbroken seed greedily, while those which are fat and plump take to the crushed seed more readily. Some poultry raisers are accustomed to mix the seeds in the grain ration during October and November or in the early molting season.

Control for the Leaf Spot of Beet.

1. Deep fall plowing and crop rotation is the most satisfactory method of control. Beet tops should be plowed under in the fall, to a depth of 10 inches or more.

2. Care should be taken that no diseased leaves are scattered to fields intended for beets the following year. Do not allow live stock to enter fields to be used for beets the following year, until several days after they have been taken off the beet-top pasture. The spores of the leaf spot fungus pass through the alimentary canal of cattle uninjured.

3. Manure from stock fed with diseased beet tops should be applied to the land one or two years in advance of the beet crop.—Otto A. Reinkingi Colorado Agricultural College, Fort Collins, Colo.

An Appreciation of the N.S.B.A. and the Maritime Winter Fair.

Strong and well established associations have been towers of strength in enabling various trade classes to overcome otherwise insurmountable obstacles. History always repeats itself along this line. The Maritime Winter Fair, the child of the Maritime Stock Breeders' Association, is no exception to the rule. Until a few years ago our Maritime stock breeders had overlooked the scriptural injuction: "Neglect not the assembling of yourselves."

It is now less than twenty years, since the most optimistic stock breeders of the Maritime Provinces began to realize that there was no reason why the pure bred stock that was every year required in the provinces by the sea should not be largely produced here. But to do it they must be up with the times. They must look after their own interests and fight their own battles.

They realized that live stock was at the base of the best and most progressive systems of agriculture. With this awakening came the noticeable fact that the livestock industries of the respective nations of the world was commensurate with their Association life. If a nation had a strong and well managed live stock association the livestock interests of that nation flourished. If organization and concerted effort was proving well everywhere else, why not in the Maritime Provinces? The time was ripe for the breeders of the Maritime Provinces to do something to protect their business and educate themselves to a higher standard of breeding.

Some means to secure an efficient registration of stock required immediate attention. Certificates from provincial herd books, for some cause or another, were not accepted as guarantee of pure breeding and were therefore worse than useless. It was time to make a move for a Maritime herd book. Then there were matters in connection with the management of the provincial exhibition and the transportation of live stock that required special attention. The individual exhibitor or stock shipper had no redress for his grievances. He was sadly in need of the moral support of his fellows.

With these thoughts in view, a band of progressive, optimistic stockmen met in the Victoria Hotel, St. John, on September 30, 1896. Included in the group were men with a vision of the possibilities for stock breeding in the Maritime Provinces along business lines: E. B. Elderkin, F. E. Page, E. Baker, W. W. Black, C. M. Holmes, Amherst; C. A. Archibald, Truro; M. H. Parlee and W. W. Hubbard, Sussex; Donald Innis, Tobique River; J. H. Reid, Fredericton and J. F. Frost, Hampton, composed the little pilgrim band.

E. B. Elderkin was appointed chairman and C. W. Holmes, secretary.

On motion of Mr. Page, seconded by Mr. Parlee, it was decided to call a meeting of breeders to meet in Moncton on the 29th of the following December. Registration of Pure Bred Stock, Exhibition Management and Railway Tariff on Live Stock were subjects suggested for discussion.

A list of one hundred names was compiled to whom the call for the December meeting was sent. An enthusiastic band of twenty-four tried and true men answered the call. The close of the year was an opportune time to make new resolutions. The meeting was held in Orange Hall. Messrs. Elderkin and Holmes took their respective places as provisional president and secretary and there and then The Maritime Stock Breeders' Association was organized. Officers were elected and strong committees were appointed to interview the various bodies that had to do with the interests of the stock breeders.

THE IMPORTED PERCHERON STALLION GLENEUR
Owned by Wm. Jamieson, Sussex Corner, N. B.
Gleneur is now offered for sale. See ad. on another page of this issue.

As we recall the list of names of those who helped to launch the M. S. B. A. we are reminded of the changes wrought by Father Time. Not a few of the fathers of this important organization are no longer actively engaged in stock raising. Several of the number have passed to the great beyond. Other men have stepped in to fill the ranks and perpetuate the good work so well begun. And we are pleased to say that some of the original band still have their hand on the helm and with a clear brain and eye are still guiding the destinies of their pet organization.

It is needless to mention in detail the names of the men who have from time to time given of their services, either as officers or as committee men, to the Association. Suffice it to say that many of them were and are men of a calibre broad enough to get a favorable hearing before government committees, corporations and all other bodies that in any capacity could serve the best interests of their association. We have yet to hear of a case where they were not kindly received and their wishes complied with so far as it was possible to do so. In fact governments and corporations were always delighted to have the farmers wishes brought to their notice. Nothing unreasonable was ever asked for and men in authority appreciate the fact.

Through the united efforts of Live Stock Associations, east an west, the Herd Books are no longer provincial nor local in character. They have, thanks to the high ideals advocated by the breeders' associations, become national in scope and eligible to international recognition.

Exhibition managements have revised their prize lists to conform to the wishes of the breeders and have established a fairly satisfactory circuit. It is true that Fredericton and Charlottetown clashed dates this year. The boys say they will "W(Hooper) up" or make a lot of Kindling wood, no, we think (Smallwood) was the word they used, if these two fairs again clash dates.

The railways have also lent a listening ear and the various grievances re transportation facilities and charges have been ameliorated. There are very few complaints to he heard nowa-days about the rough handling of stock in transit. If employees are at any time inclined to be dilitory in moving stock within a reasonable time a message to headquarters in the name of the Maritime Stock Breeders' Association brings instructions to give train So-and-So a clear road to destination as expeditiously as possible. These and many other redresses have been secured by the M. S. B. A.

Questions demanding the attention of the breeders have been discussed and acted upon at the various meetings and so the work of educating the farmer to seek his rights has gone on. There are still some men outside the pale of the Association who are gleaning the benefits for which the M. S. B. A. has worked so faithfully. The membership fee is only one dollar per year.

Lest the idea should go forth that the M. S. B. A. was organized solely for the benefit of the breeders of pure bred stock and that such men alone are eligible for membership, we would say that such is not the case. Every one who is interested in the welfare of the country is eligible for membership. Neither is the work of the Association devoted entirely to pure bred interests for it is recognized by all that it is from the grade cattle, sheep and swine of the country must come the major portion of our milk, wool and meats. The Association only preaches pure bred doctrine for the general farmer in so far as it will help him to make his grade stock better for the purpose in view.

The Association grew apace in wisdom and stature and in favor with men. On December 17th to 19th, 1911, the first Maritime Winter Fair was held. The best farmers of the three provinces were therer. They had not gone there for fun. They had heard of the great Guelph show and its benefits and they purposed testing the truth of the matter at Amherst. No more orderly or enthusiastic gathering could be recorded. Men breakfasted, hurried to the rink where the fair was held, drank in the lectures of the experts, returned for dinner and again hurried away on the same mission. Evening come, they joined with the citizens at the town hall and there again were treated to the best efforts of the country's best minds. As a show, as an educational undertaking, as a social event or solely as an intermingling of farmers the first Maritime Winter Fair and the fairs since held have been standards to which the M. S. B. A. can look back with a feeling of pride. The readers of the Maritime Farmers are familiar with the rapid growth of the Fair. Larger and better accommodation for stock has been found necessary from time to time and in due time the various changes have been effected. Such changes are being made this year so as to accommodate the stock of the old exhibitors and that of new exhibitors who have been working their herds and flocks up to the high standards of ideals set for their chosen bred or breeds at Amherst. These young men are ever ready to learn; they are not content to come to the fair and remark at the ringside that they have just as good animals at home as is shown in the ring. They are ready to show to the world that they have the courage of their convictions, and not a few of the older exhibitors have to look well to their laurels.

The lectures, and demonstrations too, have done good work. Many excellent ideas advanced on the platform and in the ring have been carried home by our farmers and given a practical test on their farms. Ideas tried, proved and not found wanting are continually being practised.

Exhibitors of scrawny, ill fed and ill groomed stock have long since learned that The Maritime Winter Fair is no place for them and not infrequently the animals outside the money prizes would make an excellent showing by themselves.

The quality of the stock shown at Amherst has showed a steady improvement from year to year. As we travel through various sections of The Maritime Provinces we can see the influences of the fair. Our farmers are gradually coming into line for better feeding, breeding and selection.

The fat stock section of the fair compares favorably with those held elsewhere in Canada. The dairy tests bring out the largest number of individuals of any similar test in the Dominion and better than that time and again Canadian records have been broken at Amherst and that by Marittime bred cows. The boys are ever ready to assist each other in the care of stock and their interchange of experiences re herd and flock management is not the least educational feature of the Fair.

From a small beginning the M. S. B. A. has extended its influences like the Nova Scotia Agricultural College until the three provinces are feeling the throb of a new agricultural life. The work of the Association cannot be gainsaid nor denied and he who refrains from visiting the Fair does so to his own detriment.

Of all the men who ever took part in the Maritime Winter Fair we believe no one ever did more to encourage and assist young exhibitors, even when they were his own competitors than did the late Wm. Robinson, who was for many years herdsman for Mr. W. W. Black. Many a young exhibitor owes his inspiration to him. Mr. Robinson is gone, but his good work and kindly assistance remains a tribute to his memory.

To the readers of the Maritime Farmer, we say: Visit the Winter Fair and take it in good faith that if you do not find something there to inspire you to higher ideals and a broader conception of your calling there is something decidedly wrong with you

(Continued on Page 134)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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NOVEMBER 23, 1915.

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December 7-21
January 11-25
February 8-22

FARM EXPERIENCE BEFORE COLLEGE.

Experience of farming in at least some of its phases is of high importance to young men who enter the colleges of agriculture. Without it the best that instructors can do with the excellent facilities at their command is to a considerable extent nullified. Graduation from an accredited high school does not provide the student with a sufficiently broad foundation upon which to begin the stury of agriculture, unless he has had a great deal to do with practical farming operations. Boys reared on farms have an immense advantage over city boys without farm experience in pursuing the studies embraced in the regular courses at these institutions. Moreover, the presence in a mixed class of students altogether unfamiliar with farm practices complicates and inhibits the work of painstaking instructors.

So valuable is farm experience to freshmen in the colleges of agriculture that, in justice to the students themselves, to say nothing of their farm-reared fellows, and the instructors, the time may come when the leading institutions will require a given measure of contact with practical farming on the part of new students. Graduates of high schools, who in many cases are in a feverish haste to complete their schooling, and forthwith tackle the agricultural world, would do infinitely better work, and get much more out of the courses, long or short, if they would spend an active year or two on farms before entering colleges of agriculture. It is too much to ask that these institutions, already overflowing with farm-reared young men and women, should devote their time to elementary teaching. Agricultural high schools and other minor institutions of learning in which instruction and some practice in agriculture are given are doing much and will do much more to prepare students for the most effective work in the colleges. At present, however, the situation in some places is discouraging to agricultural educators. It ought to be changed.

THE FAT OF THE LAND.

It was a country cellar. Along one side in well-built bins was a supply of potatoes and apples enough to last throughout the winter. All the apples had been hand-picked, and the different varieties kept separate. Even the potatoes were sorted as to size. Beneath the bins and packed in sand were dozens of stalks of home-grown celery. In another part of the cellar was a barrel of vinegar and in another a barrel of sweet cider. There was also lard, white and sweet, from the last butchering. Then there was the fruit cellar proper,, partitioned off from the main basement. Here was a wealth of canned fruits, pickles, jellies and preserves—in all, more than "57 varieties."

In this farm cellar there was not only an abundant supply of wholesome food, but here one answer to the high cost of living question.

There is need of a revival of the old-fashioned country cellar. Vest pocket purchases mean high prices. It must be so. Merchants cannot afford to handle goods in small quantities and make daily or hourly deliveries without charging more. Somewhere between the simple life, with its lessons of saving, and what someone has called the "delicatessen life" may be found one cause of the increased cost of living.

City folk cannot always enjoy such conveniences as a cellar; they cannot always buy and keep vegetables in bushel or barrel quantities. With the average farmer it is different, yet there are farmers who buy the very things that they should have to sell, and, worst of all, buy in small quantities. Right now the farm cellar should be a real picture of plenty.

A POINTER FOR OPPONENTS OF NATURE STUDY.

Prof. S. B. McCready, of Ontario, says:

When country people rediscover their own schools and get their eyes opened to the rich possibilities that lie in education of the right kind for them as farmers, we are going to see a great advance in rural districts and the cause of agriculture.

"We may have to wait until the next generation makes its influence felt, but the country leaders who are developing in our schools through the proper teaching of agriculture will undoubtedly exert a great influence when they "arrive." The place of the new kind of country teacher who will come into being will then be exalted and a new kind of school (or different new kinds of schools) to more adequately meet the country's needs will be formed. As man's continual struggle with nature in his agricultural work is to be the moral equivalent of war, so through the teaching of agriculture are country people to find new schools and new possibilities in education."

PAINTED BUILDINGS GOOD SIGN OF THRIFT.

Few people realize the value of paint either as a preservative for buildings or for the good appearance of the premises. Even a very unsightly old building may be brought to look acceptable, if given one of two coats of good quality paint. Nothing serves to bring the atmosphere of thrift to a run down farm as much as the unstinted use of paint.

The color of paint to be uesd is, of course, left to the best judgment of the person having the painting done. The thoughtful farmer will choose some color scheme and carry it out, for he will realize how much this will enhance the appearance of his farm. Imagine for a moment the difference in the appearance of two farms, one on which the farm house and out-buildings are all painted pure white or white trimmed in some suitable color; the other with no two buildings the same shade. It would not be difficult to decide which is the more pleasing of the two. It must be borne in mind that dark colors do not show up to the same advantage as those of a lighter shade. White or light colored buildings always look larger than those of the same size of a dark color. Light colored buildings can be seen at a greater distance than those which are painted in the darker shades.

Good paints are now placed upon the market at such a low cost that they should be uesd simply for the purpose of cleanliness and for the preservation of the buildings, if one does not prize the thought of beauty in connection with one's home.

HEAD WORK NECESSARY.

People do not stop to consider the amount of time that might be saved if a little more intelligence were exercised in tasks done two or three times a day. To illustrate this, take the matter of having the milk room inconveniently located. If the milker carries the milk of each cow 50 feet farther than need be, that means three rods and back each milking, or twelve rods per cow per day. If a man milks 12 cows it causes the extra labor of carrying a pail of milk 72 rods and carrying back the empty pail each day. In a herd of 60 cows, the milkers would walk 360 rods and back, or a total distance travelled of 2¼ miles per day. For a single milker it would mean 164 miles extra walking per year. If a man commenced doing this when he was fifteen years old and kept it up for fifty years, he would have walked 8,200 miles, or one-third the distance around the world. Yet all this labor might have been saved by a little head work in planning the arrangement of the building so as to make it unnecessary to carry the milk the extra fifty feet.

If this saving of time be true, with simply the operation of milking, what does it mean when all the numberless details of feeding, cleaning out stables, bedding, etc., are considered for a lifetime? It means the saving of several trips around the world for the dairyman. The dairyman who uses his brain sufficiently to fully appreciate and put into practice true dairy economy, can and should make trips around the world, but doubtless he would appreciate this travelling better if it were done in a Pullman car and ocean liner, than in his own cow stable.

COULDN'T MILK A BICYCLE.

A farmer went itno a hardware store and after making a few purchases was asked by the proprietor if he did not want to buy a bicycle. "A bicycle won't eat its head off," said the man, "and you can ride around your farm on it. They are cheap, now, and I can let you have one for thirty-five dollars."

"I'd rather put the thirty-five dollars into a cow," replied the farmer.

"You'd look mighty foolish riding round your farm on a cow," said the hardware man sarcastically.

"No more foolish than I would milking a bicycle," replied the farmer.

Seaweed as Fertilizer.

Some 14 years ago the Maine station published a bulletin on seaweeds common along the coast of Maine. This publication is now out of print. A few of the more important points relative to the use of seaweeds as manure are here presented. The principal deeper water seaweeds are two species of Laminaria, the ribbon weed or kelp; and the broad ribbon weed, or broad-leafed kelp, frequently called devil's apron. Perhaps three-fourths of the shore weeds covering the rocks between tide marks are two species of Fucus, the flat-stalked rock-weed and the round-stalked rock-weed. The specimens collected in the winter months carried for the most part much more nitrogen, phosphoric acid and potash than the same species collected in the summer season. On this account it is advisable to collect the seaweeds during the winter months, and if it is not convenient to apply them at once to the fields, they may be stored in large heaps until spring.

While the different species of seaweeds probably differ in composition, not enough samples have been examined to clearly indicate that fact. Winter collected seaweeds, both kelp and rockweed, carry about 80% of water, 0.4% ntirogen, 0.1% phosphoric acid, 0.5% lime, and 0.6% potash.

On account of the large water content and consequent weight of seaweeds, transportation far inland is not profitable. A part of the water can be removed by spreading out thinly on the shore and allowing exposure to a hot sun for a few days, but it is a question whether this practice is economical on account of the increased labor involved, and if the material is leached by rains after it has become partially dried a part of the fertilizing constituents are lost.

Seaweeds decomopse rapidly, so that their fertilizing constituents become speedily available. As they have no power of absorbing liquids there is no advantage in composting them. They are best applied directly in the green state.

Seaweeds produce their chief effect the first season. This adds rather than detracts from their value as a fertilizer, since when they can be obtained at all they can usually be had one year as well as another, and can be applied annually.

The analyses shows that seaweeds are not evenly balanced manures. They contain relatively considerable amounts of nitrogen and potash and but little phosphoric acid. Consequently land dressed for a long time with seaweed alone becomes exhausted in phosphoric acid unless a large excess of manure is added which would be wasteful of the nitrogen and ptoash. Excellent results have been obtained by using phosphates with these manures. Dissolved bone or acid South Carolina rock may be used, 300 to 500 pounds to the acre, with 20 to 30 tons of the fresh seaweed.

With most crops the best results are obtained by applying the fresh material in the spring and either plowing or harrowing it into the soil, but potatoes and some root crops, like the sugar beet, are said to be injured in quality by spring applications. This is probably due to the large amounts of chlorides of magnesia, sodium, etc., they contain, as it is well known that these substances have the effect of depressing the amount of starch in tubers and thereby impairing the quality. Farmers who use seaweeds for a potato manure can overcome this difficulty by applying it to the fields in the fall before planting in the spring. In this way potatoes of much better quality, it is claimed, are grown, than by applying the seaweeds at the time of planting.

In some localities seaweed is applied as a top-dressing to mowing fields, but if applied fresh in the summer season care must be taken not to apply too thickly, as there is danger of killing out the grass, especially on new fields. Some farmers prefer composting for this purpose with stable manure in order to fine the material so that it will spread more evenly over the field It is probable that the addition of acid South Carolina rock to the compost would greatly increase its value and aid in holding the amomnia. If the fermentation is carried very far land plaster or muck should be spread over the heap to prevent ammonia from escaping.

Eel grass is not a true seaweed, but belongs to the pond weed family, a group of mostly fresh water plants. Eel grass carries about the same amount of plant food as the seaweeds, but it is only with difficulty that it can be made available. Eel grass will hardly rot anywhere, either in the soil, in the hogpen, or in the manure or compost heap. When dried it is used as a filling for cushions, mattresses, etc. But the plant has no agricultural use.

A good dressing for potatoes would be had by applying 20 tons of winter-collected green seaweed, 400 pounds of acid phosphate, and 100 pounds of nitrate of soda to an acre. This would give about 100 pounds of nitrogen, of which a sixth is immediately available, 75 pounds of phosphoric acid, 100 pounds of lime, and 120 pounds of potash.

Seaweeds have, in common with commercial fertilizers, the advantage of freedom from weed seeds. the spores of fungi and the eggs of insects. In Rhode Island, where sea weeds are quite largely used as a manure for potatoes, the farmers are almost unanimous in saying that potatoes grown on seaweed are smoother and freer from scab than those grown on stable manure.—Dr. C. D. Woods, Maine.

Land in the Maritime Provinces.

Excepting Prince Edward Island and Alberta, New Brunswick and Nova Scotia have a greater percentage of land fit for agriculture than the other provinces of the Dominion, according to the Canada Year Book, issued by Sir George E. Foster's department. Almost all of Prince Edward Island is fit for cultivation, and almost all of it is already cultivated. But while New Brunswick has 10,718,000 acres officially recognized as capable of devotion to agriculture, only 4,537,000 acres are actually in use. That is to say, while we might be using for agriculture sixty per cent. of the total area of the province, we are only using 25.44 per cent. at present. Thus, according to the official reports on this subject, we had in New Brunswick in 1911, 6,181,000 acres fit for agriculture but lying idle —and the Canada Year Book says these figures "take no account of forests and swamp lands which may ultimately be tilled."

Ninety per cent of the land in Prince Edward Island is classified as fit for agriculture, and eighty-six per cent. is so occupied. In Nova Scotia sixty per cent. of the land is fit for agriculture, and thirty-eight per cent. is so occupied. In Ontario and Quebec the amount of land unfit for agriculture is astonishing. Only ten per cent. of Quebec is returned as capable of being tilled, and only 3.53 per cent. of the total is under cultivation. In Ontario only twenty-five per cent of the total is capable of being farmed and only 9.47 per cent. is so occupied. In Saskatchewan the proportion of land fit for agriculture is the same as in New Brunswick and Nova Scotia—sixty per cent. In Alberta it is sixty-five per cent., and in British Columbia it is twenty per cent. While the total area of Quebec is twenty-five times as great as that of New Brunswick, Quebec has only a little more than four times as much land fit for cultivation. Ontario's area is more than thirteen times that of New Brunswick, but it has only six times as much land fit for farming.

According to Sir George Foster's book Nova Scotia in 1914 had 693,860 acres in field crops while New Brunswick had 904,055, yet the value of Nova Scotia's field crops in that year was $21,969,700 and that of New Brunswick's $20,045,100. When we seek an explanation of that it is found, to some extent at least, in the numbers of live stock owned in 1914 by Nova Scotia and New Brunswick respectively. New Brunswick had a few more horses than Nova Scotia that year, but Nova Scotia had 128,237 milch cows to 102,713 for New Brunswick, and 148,269 other cattle as against 99,256 for New Brunswick. Nova Scotia had 211,921 sheep, and New Brunswick 121,739. New Brunswick had 73,325 swine to 53,892 in Nova Scotia. The cattle of Nova Scotia in 1914, including milch cows, were valued at $9,300,000, while those in New Brunswick were valued at $6,700,000. The average value of the farm lands of Nova Scotia is given as $18.13 in 1911 as against $14.21 for New Brunswick. The Prince Edward Island value is $25.85, that of Quebec $40.88, that of Ontario $41.77, that of Manitoba $30.47, that of Saskatchewan $23.10, that of Alberta $21.70 and that of British Columbia $67.28. The Canadian average is $30.41.

There are many other interesting statistics in Sir George Foster's book, but perhaps nothing in the whole work stands out more conspiciously as demanding attention than the great area of unoccupied land in New Brunswick and the comparatively small production of the land already under cultivation.

Today the energies of this whole country are properly directed toward the successful prosecution of the war. All other questions are, and must be for some time, subordinate. Yet the very war itself makes it necessary to look ahead in many directions. One of the things to be expected is that there will be a large immigration after peace has been concluded, and consequently a demand for land in agricutlural countries. Also, the world, shaked by enormous losses in men and goods, due to years of destructive war, will have to fall back upon greater production from the land, which after all is the source of all wealth. Having these things in mind public men in this province should be studying measures to increase prdouction from the land already in use and to prepare the immense area not yet in use for productive settlement by the land-hungry of the world.

Fall Plowing Serves Best.

Fall plowing is sometimes more important than the use of fertilizer on fresh-plowed ground. A striking case in point is that of a piece of land on the Horticultural Farm of the College of Agriculture, Truro, N.S. In the fall of 1914 a strip two rods wide was broken up from virgin soil for use in experimenting with fertilizer, and was allowed to lie fallow till the next August. It was then replowed, and one of the two rods was fertilized. At the same time an adjoining rod of virgin soil was fresh-plowed, and then the whole three rods were sowed with buckwheat and plowed under. The result was that the fall-plowed ground showed a growth at least five times as great as the land which was merely plowed and fertilized at the time of sowing.

Now, this, it must be admitted, is an extreme instance of the gains due to fall plowing, but it clearly shows to farmers of the Maritime provinces the great importance of the practice. Moreover, it is the best assurance a farmer can have of getting his crops early in the ground in the spring. For the farmer at that season is always under a rush. Further, if May happens to be wet and plowing must be done that month, the few fine days that appear must be used for plowing instead of for seeding. On the other hand, the farmer who plows in the fall feels sure all through the winter months that he is "ahead of the game," and that his crops will be put in early enough to insure maximum yields.

Also, it must be remembered that fall plowing puts the land in an open, rough condition that gives the frosts the best chance to pulverize and to mellow the heavy, inert particles of soil. In short, for you farmers the frosts and sunshine, the freezing and thawing, will cultivate your farms for you the whole winter long. You will then have land in the best condition for spring harrowing, and mellow seed-beds easily worked up, while the fall plowing will have killed off the cut-worms. Do not, then, let the spring work rush you and your horses. Get ready in the fall. Be forehanded with your plowing.

Potash Problem.

Important, if true, is the announcement last week that a chemical process had been perfected for extracting potash from feldspathic rocks. It is claimed that the new method will do this so cheaply that potash from this source in a form equally available to plants, can be sold in competition with German potash salts under normal conditions. The problem has been attacked for years, but without practical results. Some granites and rocks rich in feldspar contain 3 to as high as 10% of potash, but until now no way has been discovered of separating out the potash in a condition so that it would be available to crops. If the potash-containing rock is simply ground, its potash is but little if any more available to quick growing crops than in the rock state. To use such ground rock as a source of potash in fertilizers would be a downright swindle. A mine of potash salts in Death Valley, Cal., indications of such deposits in Texas, and utilizing the vast kelp (seaweed) areas of the Pacific coast, have summed up our new potash supply. It looks now as though little if any potash could be had from Germany for use the coming spring.

The Application of Fertilizers to the Soil, and Losses by Leaching.

Experiments with a lowland clay loam soil, a red clay hill soil, and a sandy clay soil with reference to their absorptive powers for fertilizers are reported by J. T. Crawley and W. B. Cady, of the Porto Rico Experiment Station.

The results as a whole indicated that phosphoric acid is very quickly and firmly fixed in all the classes of soils, but that there is an appreciable loss from the light sandy soils when the fertilization is followed by repeated irrigations. The nitrogen losses, while the greatest, were of material consequence only in the sandy soils. The clay soils fixed the nitrogen quickly and held it firmly. Potash was lost from all the soils, but in small quantities except in the case of the sandy soils. It is stated that heavy rainfalls or irrigations may wash the potash out before it is fixed, especially from sandy soils, but after becoming fixed it is washed out only in small quantities. There was very little loss of fertilizers from clay soils even after very heavy rains or irrigations. It is thought that there is not the same reason for thoroughly mixing the fertilizers with sandy soils as with clay soils, owing to the tendency for moisture to diffuse the ingredients. It is suggested also that fertilizers should be applied in small and frequent doses to sandy soil rather than in large doses at long itnervals.

HORTICULTURE.

Spraying the Orchard Through Pipes.

Probably never before has the apple been given so much attention as during the past decade. The evolution of the apple industry in this and other countries has been most marked, bringing into the fields of industry, science and inventive thought that have made possible a development which for many centuries would have been regarded as impossible. With these possibilities we see great barren fields, for many seasons neglected because of their apparent uselessness, turned into garden spots of great beauty.

With the modern idea of eliminating waste, the apple is judged guilty of contributing more than its share. We will look back, for instance, to the days of our fathers and remember distinctly his methods of harvesting the apple crop. The unsprayed trees were shaken violently until every apple was on the ground, the best of which were loaded into the bed of a wagon and taken to town for sale. Seventy-five per cent of the crop by this method of growing and harvesting was lost. What we see today is quite different, when those same trees, by proper spraying and handling of fruit, are made to produce crops ninety-five per cent of which are perfect in quality.

We find the modern grower advancing new ideas, until today the orchard man is among the keenest advocates of waste elimination and thereby enabled to really enjoy the "fruits of his labor."

Among the latest of successes in correct orcharding is the so-called piping system, whereby commercial orchards can be sprayed in one quarter of the time required by the older methods. The saving realized by the use of this system is most gratifying to the fruit grower and well worthy of mention. The horse, so faithfully a part of the old spraying outfit, is no longer needed. Instead, the power is stationary, in the form of a central power plant located at the most suitable, but preferably high point, from which galvanized pipes are laid through the orchard, allowing four rows of trees between the lines. One hundred feet apartl along the pipe lines are brass bibbs threaded for hose connection, to which one hundred feet of rubber hose can be connected for spraying. A few gate valves are necessary on main lines and at points where branch lines connect. For general use, three-quarter inch pipe is found to give best results, although one-half inch can be used on short lateral lines.

Unless the elevations above the engine are more than two hundred feet, most any power spray outfit will pump the solution to all parts of the orchard. For the level lines, two hundred pounds pressure at the pump is sufficient, while gravity spraying is possible at extremely low points, although the spray solution must be kept agitated in the spray tank while leaving in its downhill course. At the end of each day's spraying, the pipes used should be flushed with clear water, and in the fall drained.

In large orchards a saving of from four to eight hundred dollars each growing season can be realized by the use of this system.

With this key to economy, commercial fruit growers will be better able to withstand the uncontrollable losses that often confront them.--By F. H. Schroeder.

Overplanting Western Apples.

There has been such a heavy planting of apple trees in the northwestern states that some well-posted observers think the apple business has been over-done. W. L. Kidston of the state of Washington has this to say in a recent article:

"Growers in the Pacific northwest are concerned as to the apple market, not because of the deluge coming, but the trees that are coming into bearing in the whole northwest about which they know nothing. The growers will not be able to get away from the fact that prices from the 1914 crop taken from 14,000,000 bearing trees in the three states of Oregon, Washington and Idaho were ruinous. What will the prices be with the crop from nearly 10,000,000 more trees coming into bearing this year, 1915?

"They are still planting in Walla Walla county. At no year in its history has it set out more than 7000 apple trees, yet in 1914 they set out 21,000 young trees. It could not absorb the northwestern apple crop last year, and it will not absorb practically twice the tonnage this year."

There are 28,000,000 apple trees growing in the three states named, half of which are in bearing according to the figures presented by Mr. Kidston. The other half will come into bearing within the next two years. According to the Orange Judd apple crop report, these states produced less apples than last year instead of the increased tonnage which Mr. Kidston predicted. The following figures are of interest:

1915 Apple Crop, with Comparisons.
(In round thousands of barrels.)

	1915	1914	1913
Oregon	600	950	750
Washington	1,950	2,150	1,200
Idaho	150	230	250
Total	2,700	3,330	2,200

If the above crop of 1914 was produced on 14,000,000 apple trees, it shows an average of only 23 quarts or nearly three pecks per tree. An average yield of this size is not enough to make a sound-headed business man enthusiastic to pay several hundred dollars per acre for bearing orchards. New York produces nearly twice as many apples as the three states mentioned, while Michigan, Pennsylvania and Ohio each surpass or practically equal it.

The Baby Barrel.

The new half size apple barrel, the barrelette or baby barrel as it is sometimes called, is meeting with the full approval of all who have seen it. It will undoubtedly be used to quite an extent this fall, as several fruit men have already signified their intention of packing some of their fancier grades in this sized package. Experiments in facing the baby barrel seem to show that the standard-sized facing apples make a tight and compact first layer and show up very attractively when the barrel is opened for display. Corrugated caps of the proper size can be secured from any of the larger supply houses, and a press can either be purchased especially made for this small size or the standard press may be used by bending in the ends of the two arms, using a short piece of hard wood for a header block and another short piece as an upright to fill in the space between ethe header block and the end of the screw when pressing down the head of the barrel. The cooperage manufacturers claim that for the baby barrel they must charge this year something more than half the price of the standard size, but say they can reduce the cost another year if the demand for this smaller package warrants its manufacture in larger quantities than at present. Those who saw the baby barrels packed with Stayman Winesaps and Grimes Golden at the Winchester Fair reecntly were most enthusiastic over their possibilities as popular commercial packages and predicted a large demand for them in all markets. Several well-known foreign buyers have expressed the opinion that the baby barrel would prove very popular in the English markets and that also the fruit would stand a better chance of arriving in proper condition in the smaller package, as there would probably be less bruising from crushing and grinding of the loading slings.—W. P. Massey in Virginia Fruit Grower.

Plums Good Orchard Fillers.

Peaches, pears and the shorter lived varieties of apples make the most satisfactory fillers for standard apple orchards. As a general thing plum trees are not used for this purpose, but where a ready market is found for plums they are very satisfatcory.

A "filler" is a tree planted among longer lived fruit so that it may produce fruit and be removed by the time the permanent trees grow so large as to need the space. Peaches produce fruit usually the third year and are quite desirable fillers, yet peach trees spread considerably and usually have already interfered with the growth of the apple tree before removal, frequently causing permanent injury.

Plum trees are comparatively short lived and do not grow so very large and spreading. Another advantage of plums over peaches is that there are very early blooming varieties as well as medium and late blooming. The Japanese group bloom early, while the European group come along later. By selecting a number of varieties, therefore, the danger of entire loss from frost can be avoided.

Generally speaking, the late varieties are best adapted of fillers.

Protecting Orchard Trees.

As rabbits depend for food quite largely upon the green bark from the trunks of trees or the limbs of those that have been felled, it follows that in the more heavily wooded sections the orchard trees are less liable to damage from this source. I saved a number of small trees last winter by protecting them with bark cylinders peeled from the lesser forest trees, mostly chestnut, while "the sap was up," first cutting rings around the trunk and slitting down the side, so as to have the pieces in form. When these cylinders were placed around the orchard trees I slightly heaped the earth about them. In case of the larger trees, brush was packed around so as to prevent the pests from reaching them.—Frank Monroe Beverly, Dickenson Co., Va.

The New Massachusetts Apple Law

Massachusetts has a new apple grading law with teeth. Although it is not to be effective until July 1 next year the regulations have been completed and meetings for demonstration and explanation are being held throughout the state this month. The primary object of the new law is a bigger and more profitable orchard industry, based mainly on securing more uniform and stable prices for the product. It is believed this can be done only by the adoption of grading and marketing standards so that the purchaser may be sure of getting what he pays for. The means to obtain this object is education and inspection.

The law already printed in these columns states that the secretary of the board of agriculture is to draw up the necessary regulations and enforce the same. This, Sec. Wheeler has done and the accompanying chart is a concise way of telling the grower how to pack his fruit. For example, if he wishes to pack a fancy grade he will find his instructions under the column headed fancy. This gives the regulations for variety, maturity, color shapes, size, condition, manner of packing, tolerance, etc. If he wishes to pack a lower grade like B, he will find his instrutcions in the last column. Thus the chart is self-explanatory. If the farmer does not wish to pack either of the three grades in the chart he can put in anything he has a mind to, provided he labels it "ungraded," and states on the package the minimum size of fruit.

The standard barrel is the same as the federal standard having a capacity not less than 7056 cubic inches. The staves should be 28½ inches in length, diameter of heads inside of staves 17⅛ inches and distance between heads 26 inches. The circumference in the middle of the barrel, outside measurement, is 64 inches.

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A.B.C. Code 5th Edition Used

Any barrel of a different form than this, but of the same capacity, no matter what its dimensions, is a standard barrel. A flour barrel is a standard one. A standard box for apples is 10½ by 11½ by 18 inches, inside measurement, with a capacity not less than 2173 cubic inches. A box of different dimensions, but of a different capacity, is not a standard box, but may be used for packing or sale or distribution of apples of standard grade.

The new law applies to all apples in close packages grown, packed or repacked in Massachusetts and intended for sale either within or without the state; also to apples grown in other states when such apples are packed and handled as conforming to the Massachusetts standard. A barrel, box or other container the contents of which cannot be seen sufficiently for purposes of inspection without removing nails, wire, hoops or metal, cloth or paper strips shall be a close package within the meaning of the law. This includes barrels covered with burlap or other material through which apples cannot readily be seen.

The minimum size of apples sold as standard fancy grade when measured at right angles to the stem and blossom ends shall be as follows for the several varieties: First group, diameter, 2½ inches, Russet, Red Canada, Williams, Yellow Transparent; second group, diameter, 2¾ inches, Baldwin, Ben Davis, Hubbardston, McIntosh, Oldenburg, Palmer Greening, Red Astrachan, Sutton, Wagener, Wealthy, Yellow Bellflower; third group, diameter, 3 inches, Fall Pippin, Gravenstein, King, Spy, Rhode Island Greening, Rolfe and Rome Beauty; fourth group, diameter 3¼ inches, Twenty Ounce and Wolf River.

There must be a statement on the outside of the package in plain letters not less than 36 point Gothic type giving the place, name of state in which the apples were grown, the grade and the true variety. In addition must be the name of the grower or packer and his address. No package is to have marking which is more conspicuous than that required by the law. It is not permissible to label a barrel with "extra fancy' 'or any other statement appearing to enhance the value of the contents above Massachusetts standard fancy grade.

Apples when sold, or offered or exposed for sale in closed packages and not conforming to the specifications for the "Fancy," "A", and "B" grades or, if conforming, not branded in accordance therewith, shall be classed as "ungraded," and so branded.

What Other States Are Doing

That all readers may know how the six states are progressing on this measure, we make the following addition: Vermon has passed the Massachusetts law and it goes into effect this year, although there is no appropriation with which to enforce it.

Connecticut has passed the Massachusetts law and has placed it under the statutes of the general laws, so that no particular organization is empowered with its enforcement.

The law did not pass in New Hampshire or in Rhode Island, but the chances are it will go through at the next legislature.

Maine has been working under such a law for four years, and while their grades read a little differently from the present standard law enacted by the Massachusetts legislature, the idea is that in Maine they will, at their next legislature, conform to Massachusetts grades.

One of the New England leaders says: We are certainly going to keep at this question until the law is practically uniform throughout New England.

Reporting for Rhode Island Prof. A. E. Stene writes: I regret to say that Rhode Island did not enact an apple packing law last winter. The uniform law was introduced and we had preliminary meetings to line up the apple growers to back it. To our very great astonishment one of the growers who is in the legislature and whom we had expected to take up the matter before the legislature, opposed the proposition very strongly and there was also opposition from commission men present. It seemed to those interested, therefore, unwise to push the bill. We have no law at present and I hardly know if it will be possible to get one enacted. Perhaps it will be necessary to wait until some of the opposing forces are convinced of the usefulness of a law through the operation of the act passed in Massachusetts and other New England states.—New England Homstead.

Rules for Packing Apples Under Massachusitts New Law

	"Fancy"	*"B"*	*"A"*
Variety	Only one variety in the same package.	Only one variety in the same package.	Only one variety in the same package.
Maturity	Well matured.	Well matured.	Well matured
How Picked	Hand-picked.	Hand-picked.	Hand-picked.
Color	Above medium for the variety. Color must cover more than one-half the surface normally covered for the particular variety, and must be more than one-half the usual depth.	Medium for the variety. Color must cover at least one-third the surface normally colored for the particular variety, and must be at least one-third the usual depth.	Less than medium for the variety. Color may cover less than one-third the surface normally colored for the particular variety.
Shape	Normal.	Normal.	Practically normal.
Size	Good and reasonably uniform. Minimum for each variety determined by rules. Minimum size to be stated on the package (see Page 10).	Minimum size to be stated on package.	Minimum size to be stated on package.
Condition	Sound.	Sound	
Disease and fungous injury	Free from such as scab, sooty fungus, cedar rust, etc.	Practically free from, such as scab, sooty fungus, cedar rust, etc.	Practically free from, such as scab, sooty fungus, cedar rust, etc.
Insect Injury	Free from, such as result from codling moth, scale, curculio, etc.	Practically free from, such as result from codling moth, scale, curculio, etc.	Practically free from, such as result from codling moth, scale, curculio, etc.
Bruises and other mechanical injuries	Free from, except those resulting from packing.	Practically free from, except those resulting from packing.	Practically free from defects that materially injure the appearance or useful quality.
How Packed	Properly, in clean, strong packages. Second-hand barrels or barrels which have been used for other than apples may be used, but should be thoroughly cleansed. New packages are preferable. Packages should be strong enough to prevent mechanical injury to the fruit in handling.	Properly.	Properly
Tolerance	Apples, on any one defect, or on a combination of defects, may be not more than 3 per cent below specifications.	Apples, on any one defect, or on a combination of defects, may be not more than 5 per cent below specifications.	Apples, on any one defect, or on a combination of defects, may be not more than 10 per cent below specifications.

MORE MONEY FOR YOU

If you have a good sawing rig you will not only saw all your own wood but you can also do a great deal of work for your neighbors. You save money in the first place, and you earn money in doing the work for others. The important part is to get a reliable outfit that will not eat its head off in repairs. Take a look at our

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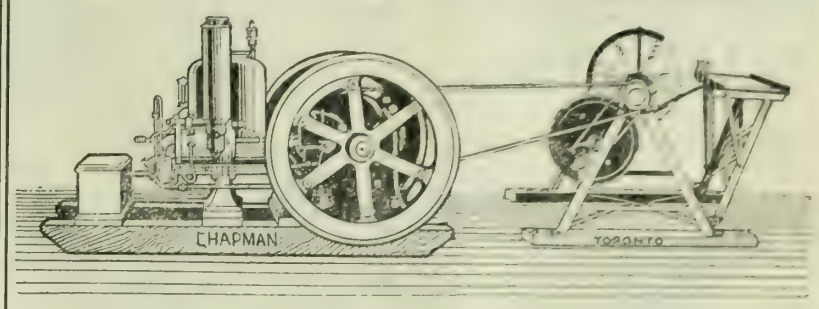

You Will Be Independent !

The high price of coal or the high cost of labor will not bother you if you have one of these outfits, for you can cut up old rails and lumber for fuel and you will not have to pay men to cut wood in the bush.

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Apple Syrup.

A Method of Utilizing Wind-fall and Cull Apples—Directions for Making This Palatable Product.

Experiments by government canning specialists show that a very palatable apple syrup can easily be made from apple cider. While it may not be practical for the average fruit farmer to produce apple syrup on a commercial scale, the home manufacture of apple syrup for the family's winter use will furnish a profitable outlet for a large number of culls and windfalls which can not be marketed.

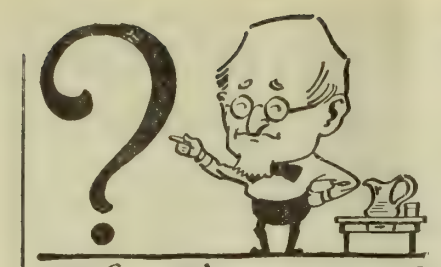
Apple syrup made by the following method is a very palatable product. It has a flavor much like the thick syrup or jelly which is so often formed when apples are baked with a little sugar. As shown by experiments, this apple can be used in cooking with good results, as well as for table purposes.

Reducing Apple Cider to Syrup.

Wash apples and remove all decayed and worm-eaten spots. Press out juice as usual for cider making. Be sure the juice does not ferment or "work," as only sweet cider should be used for sirup making. The sterilizing reducing vat or kettle should be a third larger than required to hold contents.

Add 5 ounces powdered calcium carbonate to 14 gallons of apple cider. Powdered calcium carbonate (carbonate of lime), commonly called precipi-

(Continued on Page 134)



DAIRYING.

Care of Cows Before Freshening.

A Few Things You Can Do.

Most of you boys have some care of the cattle, and many of you have a man's share of the dairy work to do. Do you give any extra attention to the cows before freshening? Also, how long do you expect them to be dry As a rule, most good dairymen expect their cows to go dry about four to six weeks before freshening. What is this for? It is only a well earned rest for the cow. If she has produced milk for the past ten and one-half months, it surely seems as though this few weeks' rest were deserved and needed. Sometimes cows are persistent milkers and will give milk right up to the time of freshening, but in such cases it is a good plan to dry them up. About five or six weeks before freshening begin to leave them partly milked, then in a day or two milk once a day, and finally only once in every two or three days. This will usually have the desired effect.

Now, what shall we feed during this dry period just previous to freshening? The cow should be in good order at the time of freshening, so feed her, during the dry period, with this end in view. If she is thin and run-down when she goes dry, feed her a good grain ration besides plenty of hay and silage, or pasture. If, on the other hand, she is in good flesh when she goes dry, clover or alfalfa hay and silage will supply her wants. You can tell best what to feed at this time by paying close attention to the condition of the cow. Let her have plenty of exercise and as calving time approaches see that she receives laxative feeds like bran. This point will take care of itself if the animal is on pasture.

There is a question which sometimes comes up in regard to heavy milking cows. Shall I milk out the animal before calving? No, unless she is an extremely heavy milker, and then only if the udder seems greatly distended with milk. However, if milking is begun before calving it should be continued regularly.

If the cow has been dry five or six weeks, and has been fed so that she is in fairly good flesh, there should be no trouble at calving time. If she is on pasture, leave her there, but be sure to visit her two or three times a day when she is expected to calve. If not on pasture, turn the cow loose in a good sized box stall several days before she is expected to calve. Right here is where every farm boy can do something. See to it that the box stall is absolutely clean, and that the bedding is kept fresh and clean. If some other animal has been sick in the stall, spray it with a 4 per cent solution of carbolic acid or some of the coal tar disinfecting products, before turning cow in. Don't take any chances with disease; keep things clean and airy.

It is a good rule not to interfere at the time of calving unless some accident occurs. Keep away from the cow, and keep away everything which may cause excitement. After calving you may take the calf away at once, or not, just as you wish. At this time the cow should be protected from cold and drafts, so if the weather is severe, cover her with a blanket for two or three days. Let the drinking water be warmed at this time. A light ration of bran mash and as much hay as she will eat readily will do for feed until she begins to recover from the effects of calving. Then gradually increase the ration until she is on full feed again.—Hoard.

When Do Cows on Your Farm Freshen?

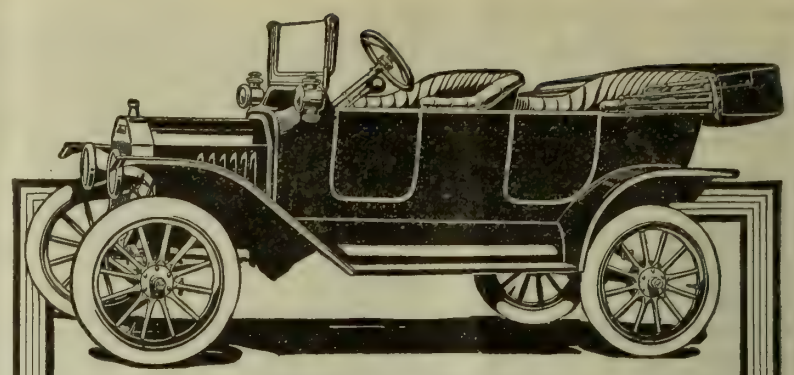
At what time of the year do the cows on your farm freshen? Do they all freshen in the spring, or in the fall? Some of you will answer this question one way and some another, and no doubt there is a reason in either case. But, is it the best reason Of course, the dairyman who retails his produce directly to the consumer must have his cows freshen at various times throughout the year in order to be sure of always having enough milk to supply his customers. But how about the average farmer who sells his milk to the creamery, cheese factory, or condensery? To often most of his cows freshen in the early spring or late winter, milk well during the summer, and are nearly dry when cold weather comes again. As a rule, this practice means a loss of money which is very noticeable because it is unnecessary.

Let's see if there really is a saving when the cattle freshen between October and Decembr. First of all, milk and other dairy products bring a better price during the winter. That being true it means more money for us to have our herd producing the best during the cold weather. In the second place, the average farmer is not so busy in the winter as in the spring and summer, so he can better afford to give more time to his dairy herd. If the cows freshen in late fall and early winter, milking requires less time during the busy fall season. Then, too, cattle which freshen in December keep up a good flow of milk longer, because they are turned out on spring pasture just when they ordinarily would begin to fall off. Nor is that all. Calves born in the winter will get better care for the first two or three months when they need it most. Then when they are turned out to pasture in the spring they are better able to take care of themselves.—Hoard's Dairyman.

Drying Cows.

In well-managed dairies each cow is milked ten months of the year; the remainder of the twelve-months she is said to be "dry." Where the dairyman sells milk to customers he endeavors to have a small part of his herd dry at a time, so that there will always be enough cows to supply his trade. An incidental advantage of this is that the milk from fresh cows is added to that from those more advanced in the milking period, and the changes due to the time of lactation are avoided in the mixed milk, which is thus kept of uniform quality. As the period of lactation progresses there is a tendency to increase in the total solids. Numerous observations have shown that the yield decreases quite steadily from the time the cow is fresh to about the middle of the lactation period, after which it is fairly constant. This shrinkage in yield is accomplished by an increase in the percentage of fat, and the physical condition of the milk is so altered that the cream rises less easily. Discard every cow that goes dry six or eight weeks previous to calving, she should be made dry. She ought to be giving at least 16 lb. a day when starting the drying process. Ten weeks before calving cut off all grain food from the cow, and, if in winter, all roots and succulent food. After a week of this treatment milk her once a day, and another week every other day; then stop. You must stop some time, for if you continue to milk the cow is bound to respond. Sometimes two or three days after stopping if you find the udder caking, milk out a little to ease it, but generally this does not happen. At six weeks or a month before calving she should be thoroughly dry.

Many farmers continue to milk the cow regularly up to within three or four weeks of calving; at this time the cow has, as it were, begun to freshen, and if they stop then trouble ensues, and the udder is likely to be spoiled. If the cow is not dry for four weeks before calving, better keep on milking the rest of the period; but I am satisfied that you can get more pounds of milk from a cow by milking her ten months in a year than by milking her twelve. At the same time, if the cow continues to secrete milk, it must be drawn. None should be forced to go dry against an evident natural resistance to so doing.



"MADE IN CANADA"

Ford Touring Car
Price $530

If you stayed indoors all winter—you might not need your Ford 'till "new grass" time But in the wide "out-of-doors" the Ford serves as well in January as in June. It's the all-year-round car with a reputation for service and economy that isn't affected by the seasons.

The Runabout is now $480; the Town Car $780; f. o b. Ford, Ontario. All cars completely equipped including electric headlights. Equipment does not include speedometer Get particulars from any branch manager, or write Ford Motor Co., Ltd., Ford, Ont.

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THE UNIVERSAL CAR

The high quality of Purity Flour comes from
First—The selected wheat we use.
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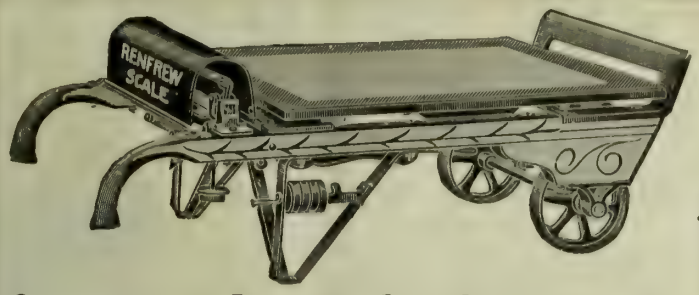


Renfrew Standard Big 3

Government Inspected. Guaranteed

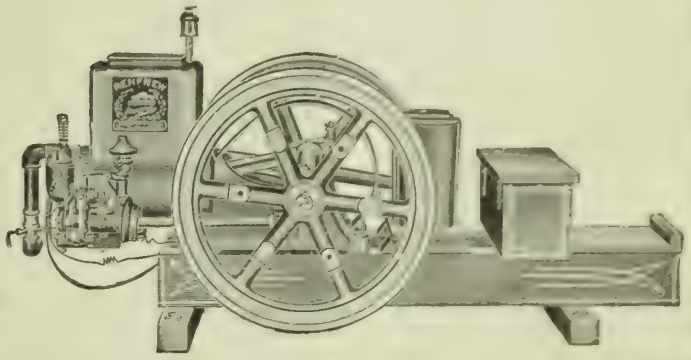
In your heart, you know that you need a good scale on your farm. You are losing money every month you are without one. Go to our agents in your locality and see the Renfrew Truck Scale—the handiest scale for farm use. Weighs anything from a pound to a ton. Staunchly built. Wheels around like a truck. Stands up in a corner out of the way when not in use. Scale catalog free.

Close Skimming. Self-Oiling.

Government Dairy School records show that the Standard is unbeatable as a close skimmer. Another unbeatable feature is the self-oiling system. This is positively automatic. You simply pour in a certain quantity of oil every three months and the Standard's self-oiling system does the work itself. Every working part receives its share of oil. This means that the Separator runs easy all the time, and no oil is wasted. Other big features explained in our free separator catalog.

Dual Ignition. Extra Large Size.

The Renfrew Standard now has dual ignition as regular equipment. That is, it has a complete high tension magneto ignition system in addition to the batteries. The engine has also been increased in size. The 6 h.p. Renfrew Standard is now almost equal in size to the usual 8 h.p. engines. More weight, more power, more strength, more wear-resistance, more value for your money. Other big features described in our engine catalog—free.



The Renfrew Machinery Co., Limited, Renfrew, Ontario

MARITIME BRANCH, SUSSEX, N. B.

What's a Good Cow Worth?

Back in 1878 James L. Cooper of Tennessee paid $300 at auction for the Jersey cow Golden Eye. His neighbors thought he was crazy to pay such a price for a cow. Since then he has never bought another cow, but has raised and registered from this caw and for a number of years the bull calves were killed at birth, while some of the heifers died or were sold to the butcher for some defect.

In 1907 Mr. Cooper had a public sale and sold 100 head, keeping only three or four old cows and 24 calves. He has sold liberally from his herd ever since it was of any size, and since 1907 his sales have been more liberal than before, but he still has 50 head tracing back to Golden Eye.

In writing of his early years at farming, Mr. Cooper says: "I soon discovered that there were much labor and very little profit in simple farming, and getting hold of a few grade cows, commenced selling milk and butter in a very small way at first. The grades served a useful purpose for some years, while waiting upon the slow increase of my registered stock, but I gradually worked them off, and have had none for a long time.

"I built up a good business in milk and butter, and with that and the sale of surplus stock, for my herd finally increased in numbers to the selling point, managed to raise and educate my family, supplying them with all the necessities of life and some of the comforts, and took care of the mortgage. I could not have done it had I depended upon farming alone."

What an inspiring example for a young farmer—buy a first-class female for foundation stock and raise her progeny. Mr. Cooper adds:

"I know of nothing more promising of good results to a young farmer, not afraid of a little work, than breeding registered cattle. My preference is the Jersey always, in connection with the sale of their products."

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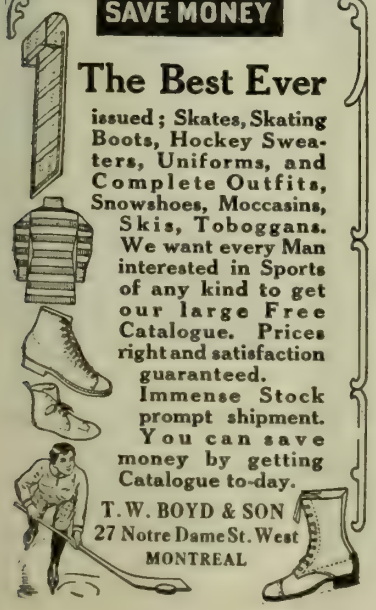
The Best Ever

issued; Skates, Skating Boots, Hockey Sweaters, Uniforms, and Complete Outfits, Snowshoes, Moccasins, Skis, Toboggans. We want every Man interested in Sports of any kind to get our large Free Catalogue. Prices right and satisfaction guaranteed. Immense Stock prompt shipment. You can save money by getting Catalogue to-day.



T. W. BOYD & SON
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MONTREAL

Treat Imflamed Udders Promptly.

Garget makes an appearance every once in a while in cows which apparently are in perfect health. The milk in severe cases is either stringy or otherwise altered in character when drawn and collects a yellowish colored sediment on standing. In less pronounced cases there may be little visible change in the milk, but on examination would reveal a large number of germs.

Non-infectious garget is caused by bruises or other injuries, or by a sudden congestion of bolod in the udder as frequently occurs in heavy milkers and in heifers at first calving. Affected animals usually make a complete recovery if given 1½ lbs of Epsom salts and their feed is restricted to that of a succulent nature.

The cause of infectious garget is a germ or germs. When many of them are present in the udder not only is the milk changed, as mentioned above, but the udder itself becomes hot and sensitive to the touch.

The importance of the infectious form of garget rests in the fact that it is usually not easily cured and has a tendency to recur. Furthermore, the disease is easily conveyed to healthy cows through the medium of the milkers' hands or contaminated material of any kind, unless precautions are taken to avoid the transfer of the germs.

Temporary relief may be given by bathing the udder with hot water for one half hour each morning and evening. After thoroughly drying the surface of the udder, warm cottonseed oil should be rubbed in with the palm of the hand.

A complete cure is possible in most cases only by drying the cow off at once so that her system may be free to fight the disease-producing germs that are present in the udder.—F. B. Hadley, in Farm and Dairy.

Just Suits My Needs Building Up the System

This is the Way Thousands of Women are Speaking of Dr. Chase's Nerve Food.

"I want to state that I have never taken anything to do me so much good as Dr. Chase's Nerve Food," writes Mrs. Edson Brock, Trenholmville, Que., "and I am never without it in the house. I was so nervous I could not sleep, but now I sleep soundly at nights and wake up feeling refreshed and ready for the day's work. I used the Nerve Food for months and found that it just suits my needs and has built up the system wonderfully. I know it is Dr. Chase's Nerve Food that has brought about the great change in my condition and am thankful for it.

"My husband was a great sufferer from itching piles and has been entirely cured by Dr. Chase's Cintment."

We are constantly receiving letters like this in regard to Dr. Chase's Nerve Food. Everywhere it is being used because of its great restorative and reconstructive influence on the nervous system. Men and women who are run down in health, tired, nervous and discouraged, find in this great Food Cure the means of nourishing the exhausted system back to health and vigor.

Headaches, indigestion sleeplessness, nervous irritability, lack of energy, and vigor — all tell of nervous exhaustion, and indicate the need of such treatment as Dr. Chase's Nerve Food.

Instead of affording mere temporary relief by stimulating the nerves, Dr. Chase's Nerve Food builds up the system by supplying the ingredients from which Nature forms new rich blood and revitalizes the wasted nervous system. Put Dr. Chase's Nerve Food to the test when you are feeling tired out and discouraged, fill the body with new rich blood and new nerve force and you will realize again the joy of good health. 50 cents a box, 6 for $2.50, all dealers, or Edmanson, Bates & Co., Limited, Toronto.

LIVE STOCK.

Boys Raise Baby Beeves.

In Texas They are Revolutionizing the Cattle Industry.

The facts in the following article are taken from "Pigs and Baby Beef" by Stanley Johnson, in a recent issue of the American Magazine. The article in question has been forwarded to the Maritime Farmer for publication by Mr. Robert Hetherington, Cody's, Queens county, N.B., who is interested in the breeding of high class Shorthorns.

"One day in 1912 C. C. French, secretary of the Stock Yards Company of Fort Worth, Tex., said to a cattle man: "There is only one way to save the cattle business, and that is to get the boys and girls interested in it."

"At that time there were slaughtered each year in Texas half a million calves. If they had been saved and fed for a few months they would have been worth 33 million dollars more than they were when killed. The people were killing calves when they ought to be raising "baby beeves," and this was one reason why beef cattle were disappearing and the price of beef advancing.

"Mr. French began organizing baby beef clubs in Texas in 1912. His first call for members brought a response from 500 boys the first year.

Interested the Boys.

In speeches he urged fathers to give their boys a chance to be more than "chore boys," to become farmers in embryo, partners on the ranch. "Every ranchman," he preached, "should get his boys interested in their home life. Give a boy a pig or a calf—and he will want to stay on the farm."

The plan became amazingly popular. The Texas Industrial Congress offered $1,600 in prizes. Ranch owners gave calves to boys, the mayor of Dallas contributed $1,000 for the purchase of pigs and calves; the way was thus cleared to turn stock selling for two million dollars as veal into 35 million dollars as baby beef.

"It became too big a job for its founder, so he drafted Sam Matthews, who, at 15 years old, became an orator as well as a winner of prizes in the great fat cattle show at Fort Worth. Sam became president of all the baby beef clubs of Texas. As the first winner of the state championship, and a state campaigner, young Matthews has become a leader in the affairs of the great state before he is a voter.

Sam advises the boys of Texas to stick to the farm: "I think there is a good future for the boys and girls on the farm," he says, "if we can get it out of their parents' heads that they should not leave to become lawyers, doctors, or governors, or anything along that line.

Boy Gives Advice.

"Give the boy on the farm something to interest him, so that he will become an educated farmer. Send him to an agricultural school, when he is old enough, and not to practice law at the bar."

While Sam at 15 is the dispenser of this sound philosophy, he shows the germ of a good business farmer in the record he submitted with the prize winning call, as a part of the required work of the club.

"I believe in play, he wrote, but the most interesting game I have played is this baby beef production contest. It is interesting because I like to study the laws of nature. I like to feel that I have been able to direct some of the forces of nature in the production of a more perfect animal. I like to win in the contest against you other boys; and, last of all, I like to earn that fifty cents an hour for my work, as I have been able to do this year on my one calf.

I bought one calf for $30 on credit; fed it 150 days at a cost of $23.30 for feed. This was while I was going to high school. Freight to market cost me $3.23. I sold the calf at the age of one year, one month and nineteen days, weighing 1,001 pounds, for $95.09. The net profit was $38.56, besides the $40 prize money. Come in, boys, and join this game, and we shall help to keep down the high cost of living, as well as make some ready cash.

9-Year-Old a Champion.

The winner of Texas baby beef grand championship, this last year, was Howard Hale of Midland, 9 years old. He was given his calf by one of the leading ranchmen of Texas, Henry M. Halff of Midland, who is one of the leading herders of baby beeves, a believer in this movement. Howard Hale came back from the National Feeders' and Breeders' Show at Fort Worth with $180 in money and a $500 silver cup.

The baby beef club idea has spread to other states and the champion baby beef grower of the world is Miss Ada Thames of Covington county, Mississippi, who won her title a year ago in an independent baby beef club, the first of its kind in the state. Miss Thames raised a heifer, "Lady Grace," winning first prize in competition with seventy-five others. When the prize calves were sold at public auction in the county roundup she was offered $395 for "Lady Grace"—and refused to sell. Some day in the near future she will be heard of as a producer of superior stock.

What Baby Beef Is.

Baby beef (to use Mr. French's own words) in a technical sense is not merely young beef. It is a young beef animal from a year to a year and a half old that still retains its baby fat. A calf, with a good supply to begin with, as long as it has milk enough from its mother to satisfy its hunger, retains this fat. If Nature's milk supply falls short and there is no feed to take its place, the calf falls off and the baby fat is consumed to supply the needs of nutrition. This once lost cannot be replaced. The calf may be fed abundantly and get fat again, but the flesh of that animal is never quite the same as it would have been had it not been allowed to become thin. There will never be that fine mingling of lean and fat that makes the highly prized beef. The purpose of the baby beef clubs is not strictly to produce this quality of beef, however, but to feed the calf so that the beef it makes will be of superior quality, and to mature it in the shortest possible time.

Dickie's Miss La Honda Still Going Strong in the Dairy Test.

Arthur E. Dickie, Central Onslow, N.S., writes under date of November 16th: Our Holsteins are looking better than we ever saw them and the cows are doing well at the pail. Miss La Honda, last year's test winner at the Maritime Winter Fair, has done better than 30 lbs. butter in seven days and has been running over 100 lbs. milk per day for a considerable time. Her best day's work so far has been 106 lbs. milk.

Cobequid Helbon Princess made 21½ lbs. butter in 7 days. She has made as high as 76 lbs. milk in one day. She is 4 years old.

Among the young bulls we are now offering for sale are several whose two nearest dams average from 26 to over 32 lbs. butter in 7 days, in official test.

We are having a hard time getting our turnips harvested owing to the continued wet weather.

[Editor's note.—Mr. Dickie keeps a close record of what each and every cow in his herd is doing. He is not afraid to let the readers of The Maritime Farmer know about his cattle and their achievements. He has every reason to be proud of his herd. What is your herd doing? If your cows are doing well at the pail it is good business for you to let prospective buyers know all about it. There are many, many prospective buyers among the readers of the Maritime Farmer. Send along some notes about your stock from time to time for publication in these columns. It will not cost you anything—our readers will be interested and it may be the means of bringing you inquiries and sales for your surplus stock.

MAKES THEM LAY.

International Poultry Food Tonic so stimulates the hen's system that she simply has to lay eggs.

INTERNATIONAL FOOD POULTRY TONIC

MADE IN CANADA

is a mixture of roots, herbs and spices supplying to the fowl elements not contained in the grain feed, and it makes hens lay more eggs by stimulating and strengthening the egg producing organs, as indisputably proven by the sale of over five million boxes. Also keeps poultry healthy and vigorous and makes young chickens grow rapidly.

Its use is cheap, one extra egg in two months will cover its cost for each hen. Its effects are immediately apparent in increased egg production and better health in all the flock.

It is sold in 25c. 50c. and $1.00 packages, under a "spot cash money back" guarantee, by dealers everywhere.

FREE—Write for our free book, the "International Poultry Guide", a complete compendium of poultry knowledge.

INTERNATIONAL STOCK FOOD CO. LIMITED

172 TORONTO, ONTARIO

A Clean Sweep at the Fall Fairs of Quebec and New Brunswick.

Harding Bros., the famous Holstein breeders, of Welsford, N.B., write: Our herd was never in better shape than at present, after two months campaigning at the different exhibitions, where they so successfully carried off the majority of the choicest prizes. At all the Quebec and New Brunswick fall shows, competent judges claimed our herd to be the most uniform herd in type in Canada. The young stuff are mostly all sired by our well and widely known stock bull, Schuling Sir Bosch. Among our big breeding females is Shade Lawn Auling 2nd, a strong, smooth cow weighing close to 1700 lbs. and possessing the very best quality. She has just dropped a beautiful pair of heifer calves and is giving over 80 lbs. milk per day on two milkings a day. She has a sister, Madam Bosch Pauline, owned by the Colony Farm, in British Columbia, that gave 34 lbs. butter in seven days and 1800 lbs. milk in 5 months.

Our Blizzard Schuling Posch, a two year old heifer, was grand champion at Valleyfield, Que., and Three Rivers, Que., as well as winning in the dairy test at Quebec and Sherbrooke. She was also junior champion this fall and last fall as a yearling; she was first wherever shown ever since she was a calf. We have a number of bulls, all ages, for sale, and also some choice females of different ages.

Visitors will be met by appointment and all correspondence will be promptly answered. Local and long distance telephone in the house.

Know the Ailments of your Live Stock.

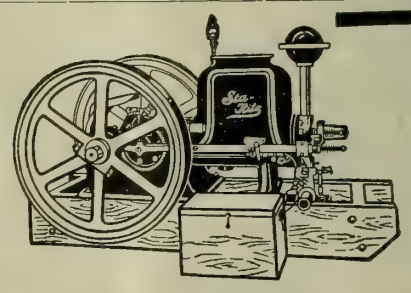
Times without number stockmen are victims of heavy losses because they do not know how to diagnose even the most common diseases to which their cattle, horses, sheep, swine and poultry are subject. An animal is taken sick and may suffer excruciating pain before a veterinary can be procured. On his arrival the veterinary quickly diagnoses the case, administers a few simple remedies and the animal is relieved and on the road to recovery in a short time. The stockman pays a bill of from $5.00 to $25.00 or more as the case may be and away the veterinary goes. Not infrequently when the veterinary arrives he finds that the animal is too far gone to be able to do anything to save its life, but his

Read This Letter

Does it leave any doubt in your mind that a reliable Gas Engine earns its cost over and over and over again? Where would Mr. Porter be without his

EMPIRE "Sta-Rite" ENGINE

W. J. Irwin, of Peterboro', says "it is the simplest engine on the market and with less machinery about it." Just suited to a farmer's needs — pumps water, churns, chops silage—does anything needing power.



Gentlemen—Regarding the Sta-Rite engine I bought from you last October, would say that I am well pleased with the engine.

We run a twenty-two inch buzz saw for sawing poles, and have an old clover huller cylinder with which we shell corn. We shell at the rate of 16 bags of cobs in 13 minutes, and use one quart of gasoline per hour.

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bill must be paid just the same. Then there are sections of country where there is no resident veterinary and it is in sections of this kind that animals suffer the most for lack of a little timely treatment.

Each and every stockman, whether there is a resident veterinary in his district or not, should strive to acquaint himself with the symptoms of and treatment for the most common ailments to which his live stock are subject. It will mean a saving of much money for him. There are some excellent works published on this subject, but the most simple and easily understood that it has been our privilege to peruse is that published by the Veterinary Science Association, London, Ontario. C. M. Robinson, Riverside, Albert Co., N.B., is one of the Association's general agents. You will find his ad on page —— of this issue. Write him if interested.

Dehorning Cattle Should be Done When Very Young.

The question is often asked, "When is the best time to dehorn " It may be said that the work should be done either in the early spring, before the flies and other insects become troublesome, also the warm weather, or else late in the fall after these pests have disappeared. Of course, it should not be too late in the season, as very cold weather in injurious and may cause a cold in the head which will greatly retard the healing process.

The effects of the operation of dehorning vary considerably. We have known large herds of dairy cows to be dehorned and none of the animals fell off in their milk flow for more than a couple of milkings. Again, we have known instances where a majority of the animals would be pretty dull for several days, and, of course, it is true that occasionally an animal will be lost. But this usually happens when a cow is in poor vitality, or when the work is done at an unfavorable season, hence such losses are largely avoidable. The exact loss of flesh or milk due to the excitement loss of blood and pain cannot be estimated, as very much depends upon the skill of the operator, and perhaps more still upon the temperament of the animal operated upon; nervous, irritable animals suffer a greater setback than the quiet, sluggish ones.

Some animals bleed severely. To prevent this, wind a piece of strong twine firmly around the head just below the horn bases so as not to interfere with the operation. Then tighten the twine by drawing together the upper and lower strands midway between the horns and fasten with a knot. Twine put on in this manner presses firmly against the large arteries. In a few hours the twine may be removed, when danger from bleeding will have passed. After dehorning the cattle may be turned into the pasture or corral, but they should not be permitted to rub against any hay or straw stacks until the wounds have healed, as chaff in the openings may cause considerable trouble.

Several different kinds of instruments have been invented with a view to accomplishing the operation with as little pain as possible to the animal. The dehorning saw was among the first to appear. This instrument is still used in many cases, but while it does the work required of it, it will always seem to be unduly cruel. The clipping dehorners are now employed extensively, as they cut the horns off in a fraction of the time required by the saw, and the pain is reduced to the minimum. The saw, as a rule, makes the neater job; occasionally clippers crush the bones, causing a slow healing. Unless the horns are taken off very close they bleed badly an dstubs grow. Care should therefore be exercised to do the job thoroughly. The cut should take about one-sixth of an inch of the skin around the base of the horn and should be slanted, with the natural slope of the head.

If one has a great amount of dehorning to do, he should equip himself with a dehorning chute, in which the animals may be driven, one at a time, and the operation be performed with less labor, and in a much shorter space of time.

It is to be hoped that in time less and less dehorning of the kind we have discussed will need to be done and that the dehorning of the future will be more generally done before the horns have grown to be more than tiny buttons on the head of the calf, at which time they are readily and almost painlessly removed by touching with a stick of caustic potash. The action of this agent when properly used is to destroy the life of the horn in its early stage, rendering the treated animal a smooth headed beast.

Dehorning by potash is done before the calf is ten days old or as soon as the embryo horns can be located on the calf's poll. The hair surorunding the horns should be clipped off and the parts moistened with warm water. When using the potash in the stick form it should be wrapped in paper to protect the hand and an exposed end moistened and rubbed gently on the buttons in turn for about five minutes, or until they become sensitive and red, but not to the extent of bleeding. Care must be taken that the dissolved potash does not run down the side of the head, or the skull may be permanently disfigured. The calf should be kept from getting wet for a few days following treatment so that the dissolved potash will not run down. Treated calves should also be kept separately so that they can not lick each other. The calf will suffer some pain for an hour or two, but no other inconvenience is experienced. If the work is carefully one a scab soon forms, healing follows and the spots become covered with hair from the surrounding parts.—W. F. Purdue.

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Ewes on Turnips.

It has passed into a proverb that a good turnip year means a bad lambing year, but there are still some who pooh-pooh the idea of any mischief being likely to result from an unrestricted diet of swedes for pregnant ewes. The season has come when the feeding of the swedes will be commenced—in many cases before they are ripe—and perhaps it may be useful to warn farmers once more against their unrestricted use for in-lamb ewes. I cannot pretend to say why it is that almost exclusive root-feeding can, sometimes for several years, be practised with immunity, but undoubtedly such cases occur, and it is these cases that cause carelessness of confidence in others; but this much is certain, sooner or later, there comes a rude awakening, and it has to be admitted that there is danger in heavy root-feeding during gestation, and especially so when ewes have been flushed on highly nutritious food at conception. It is conceivable that during the period of gestation, a moderate allowance of roots, especially combined with some dry and more nitrogenous material, will save many ewes from becoming poor and aeaemic, as they often do when the weather and disease-producing agencies have ruined the turnip crop, but any quantity of roots alone, at the gestation or any other period, is more likely to increase than relieve an anaemic tendency. Anaemia is caused by the unlimited ingestion of food grown with an excess of phosphates and surcharged with water. The final stage of this sickness is nothing more than dropsy.

Heavy root-feeding without compensating dry matter results in gradual but steady emaciation, and where in addition there have been the demands on the system of intra-uterine life, succeeded by the weakening effects of lactation, many ewes die of anaemia. They become "poked," as the oedematous swelling under the jaw is called, and the visible mucous membranes have the blanched appearance resembling that seen in "rot"—in fact, the condition is practically the same, except that it arises from a different cause. There is abundance of evidence of bad lambing-times being distinctly tracable to the exclusive use of roots in seasons when roots are unusually abundant, and, as the owner often says, he does not know what to do with them. Better let them rot or return them to the ground as manure, than to trust the in-lamb ewes with them.

Lack of Exercise

In the case of pregnant ewes the mischief is not confined to the effects on the system of an enormous quantity of watery food. There is also that arising out of the lack of exercise associated with constantly folding on roots. Exercise is absolutely essential to the health of the in-lamb ewe, and to the proper development of the foetus. To a limited extent this is recognized, and an endeavor is made to provide for it by removing the ewes from the fold during the day and returning them again some time before sundown. But the animals do not keep moving about in the pastures as is their wont when grazing. Often there is little enough there for them to eat, and, anyway, they soon seem to acquire the knowledge that in a short time they will be taken again to the roots left in the morning. Thus they lie about until this time arrives, when, with appetites quickened by their self-imposed fast, they have another gorge. Look, too, at the state of the fold in wet weather on the heavier kinds of land. Are they fit for animals heavy in-lamb to spend 18 or 20 hours in? In the interest of economy, or of the succeeding crop, it is considered essential that the roots should be consumed on the ground, if the sheep are kept as muck-distributors, well and good, but there ought to be no surprise if breeding operations are not attended with any great measure of success, and if dead or "dropsy" lambs are produced and some ewes die at or soon after parturition.

"Bursting" the Ewes

Sometimes this actually happens, and rupture of the muscular walls of the abdomen occurs. The manner in which this result is reached is purely, or nearly purely, mechanical. The ewes thus affected are usually those with twins or triplets. As gestation advances, the weight and bulk of the gravid uterus, added to the large quantities of innutritious food with which the stomach is kept filled, proves too much for the resisting power of the abdominal walls. This same distention of the digestice organs with a material considerably below the normal temperature of the animal body, and the accompanying pressure upon the gravid uterus, is also productive of arrest in foetal development, and the occurrence of premature births and the production of dead lambs. Against a moderate allowance of roots, with a sufficiency of dry food, nothing can be said, but the temptation to use them freely, because they are abundant and the grower hardly knows how to dispose of them, needs to be resisted.—Veteran.

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THE HORSE

Shoulder-Slip or Wasted Shoulder.

Shoulder lameness affects principally only a certain class of horse, working under peculiar conditions, viz.: young horses that have been plough ing. It is called "shoulder-slip" because of a peculiar outward slipping movement of the shoulder joint at each step the animal takes. It appears almost that the shoulder is out of joint, but this is not the case, and the peculiar "slipping" movement can be explained by a consideration of the anatomy of the part. It is called "wasting," because the ultimate effect of the sprain and consequent inflammation is atrophy, and where there was previously a fullness there appears a distinct hollow, this going on in extreme cases until the shoulder-blade appears covered only with skin, and the spinous process becomes distinctly visible. This term is, however, applied indifferently to any case of atrophy, and as wasting of the shoulder muscles is a common result of all long-standing and severe lameness entailing disease of the limb, it is of very little value as expressing the form of injury under consideration.

In the first stage the lameness may not be very severe, and there is little or nothing to see, because the atrophy of the muscles is an after effect, and very often only apparent after a considerable interval has elapsed after the strain.

Sprain of the muscles outside the shoulder blade may occur from unexpectedly stepping into a hole, and hunters may meet with such accidents among rabbit burrows, but it occurs mainly in young horses when first put to plough. It is seldom that older horses suffer, as they have become used to the work, are generally in harder condition, and are able to avoid injury themselves.

The usual symptoms are swelling and heat over the course of the muscles, upon the outer surface of the shoulder blade, and in the joint itself. If only one shoulder is affected, something may be learned by a careful comparison with its fellow, but sometimes both are injured. The horse may progress without much apparent lameness, but by standing directly in front of him the affected shoulder will be seen to roll outwards from the body to a greater extent than the sound one. giving rise to the characteristic gait already described, and from which the lameness takes its name. In the majority of cases actual lameness does not occur until the muscles have become atrophied, and instead of swelling there is a wasting of the shoulder. This does not take very long to come about, and a well-developed atrophy may occur in the course of three weeks after a sound horse has been put to work. This is much more rapid than where atrophy arises from diseases of the limb from lameness in the foot or elsewhere. When wasting has taken place there will be a hollow space upon either side of the scapular spine, the process being thus rendered prominent and standing out as a sharp ridge. The only way to prevent shoulder-sprain in young horses is to bring them gradually to work, to avoid working them in company with animals that will outpace and fatigue them, and to keep animals intended for hunters or cariage work at some other occupation than ploughing. If young horses do short turns until they get into hard condition, and used to the work, the risk is reduced to a minimum, especially if they work in company with old, steady horses. When a colt becomes fatigued he loses command over his actions, becomes unsteady in his gait, and thus liable to sprain himself.

Even badly-wasted shoulders are curable, unless degenerative changes have taken place and the parts have become organically altered. It may take months to refill the hollows on each side of the scapular spine, but in any recent case perseverence will meet with its reward. The first step is to rest and to reduce inflammation. The amateur and domestic treatment of sprain of the shoulder is often as bad as it can be, because of the foolish plan of at once resorting to an embrocation, and this applies with equal force to all sprains, whether of muscles or tendons. Stimulating liniments, blistering agents, and "oils" should never be applied to a recent sprain, or to any structure in which acute inflammation exists, but this should be first reduced by rest, fomentation and medicine. Exercise is often given under the mistaken notion that it will work off the stiffness, but, in the first stage at least, rest is very essential, and even voluntary movement, such as the horse makes when turned out to grass, in walking for a living, is to be discouraged. A good loose box, bedded with moss litter, sawdust, or cut straw, in which the horse is less likely to catch his toes than in the deep bed of long litter, should be provided, and the shoes removed. It may even be useful to replace the shoe ordinarily worn by one with a high heel, as this enables the animal to rest the parts better by standing with the injured muscles in a state of relaxation or repose. A dose of physic may be usefully given, especially if the horse is in a plethoric condition, and for the same reason the diet should be light, and the corn dropped out of the ration. The part is an awkward one to foment. and this operation is rarely carried out in a satisfactory manner by attendants, whose idea of a fomentation is dabbing about with half a bucket of lukewarm water, most of which is spilled on the ground. It is best to begin and keep on with cold water, and the easiest way to apply it is to hang a rug over the shoulder, securing it round the chest and neck, and keep the blanket wet by frequently ladling water between it the the skin with a cup or small pot. After the heat and tenderness have subsided, or the muscles have begun to waste, the repeated applications of moderate stimulating remedies, such as mild blisters, and such exercise as is obtainable in a good level pasture, are indicated. Between the intervals of blistering, or when a stimulating liniment is used, some recommend light work at a walking pace, as being calculated to develop and give tone to the atrophied muscles. Massage and galvanism are preferred by some to active stimulation. The cases that do not yield to treatment are those in which the tendons of the muscles, the rim of the gelnoid cavity of the scapula, or the external trochanter of the humerus have become organically altered in structure.

Horses that have recovered from shoulder-slip should never be put to the plough again. It is very desirable to be able to differentiate between wasted shoulder from spraing and that kind of wasting associated with chronic foot lameness, and resulting from long disuse, because a horse with a wasted shoulder from sprain may prove a useful purchase, and by time and judicious treatment come round, but the other kind of wasting would prove a bad bargain.—Veteran.

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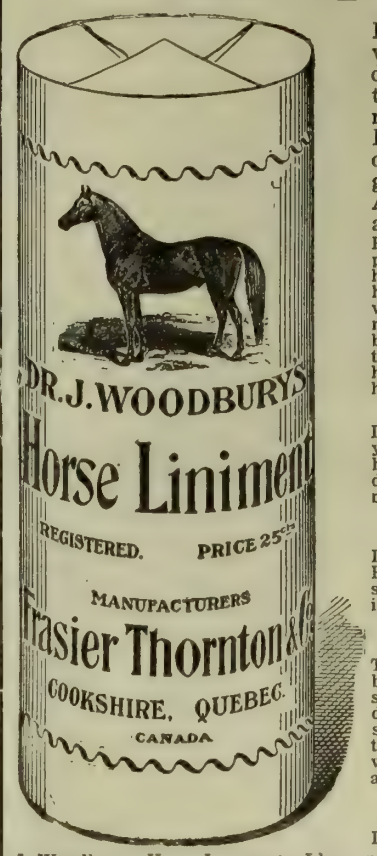

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True and False Economy in Feeding.

It has often been pointed out in these columns that there is danger of the farmer parting with his saleable hay and endeavoring to maintain his own horses on inferior rubbish, or to substitute straw or worse material in large part for the hay sold off. It is no economy to sell hay and so to feed the team that efficient work is not obtained, or so that the horses become affected in their wind, or suffer from colic and other digestive derangements. At the same time both the seller and buyer of hay might well economize by using more grain than they usually do. Farm horses get a good deal more hay than is necessary or desirable, with an allowance of grain in inverse proportion. During the summer, when green meat is plentiful, the carter is permitted to put his scythe as deeply as he likes into the "seeds," trifolium or tares, and to regale his charges with vast pitches of this sometimes succulent and sometimes over-ripe material, and at other seasons he has a free run to the "seed" stack, as clover-hay is commonly called, while at the same time the "pilkings," or thin, hungry oats, are carefully doled out to him. Hay in such enormous quantities is not necessary nor desirable, having regard to the cost of production, nor is it a cheap food, even when plentiful, having regard to the quality of the work obtained. When hay is dear, money would be better spent in oats and beans. It may be necessary when hay is inferior to provide the horse with large quantities from which to extract the essential nutriment for his maintenance, but it only puts a heavy strain on the digestive organs, causes colic and broken-wind, and is anything but economical in the end.

For all horses a certain amount of bulk is necessary, and hay, or hay and straw chaff, cannot be dispense with entirely, but the actual quantity required is much less than that generally given. To the horse at fast or hard work it will be a great advantage to have more oats and less hay, while more grain would undoubtedly tend to increase the working capacity of the average farm team. Straw should by no means be entirely neglected as a substitute for hay. At all times horses doing slow work can have a proportion of well-saved straw cut with their chaff and be none the worse for it; but, as a rule, this proportion cannot safely exceed one part of straw to two parts of hay without taxing the digestive organs, and half and half should be an outside limit for even horses at slow work receiving a fair grain allowance. It must always be remembered that against any saving by the use of inferior or unsuitable food for animals there may have to be put a veterinary surgeon's account for attendance and medicines, loss of men's time in nursing and watching, and loss of the services of the horse. It does not take many veterinary visits to equal the price of a quarter of oats, or a long case to cut deeply into a ton of hay. Taken all round, and over any extended period, doubtful feeding experiments rarely pay in the end, and the most that can be said, in the majority of cases, is that the animals survive, generally at some sacrifice of efficiency. The country practitioner is frequently called upon to attend cases of indiges-

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tion brought on by a too free use of straw as a substitute for hay. The chaff in many instances consisted almost entirely of straw, sometimes of wheat "cavings," and very often the hay supplied was inferior as well as small in quantity. Hard, flinty wheat straw, full of harder "knots" or joints, is more than the average horse can digest, when it is used as a "fill-belly." When taken in good time, properly treated, and an alteration made in the diet, recovery from attacks of "straw colic" is the rule, but still many horses die of this distressing equine complaint.—Veteran in Farm and Home, England.

Health of Animals.

The recently issued report of the Veterinary Director General (F. Torrance, B.A., D.V.S.) is a comprehensive document an done worthy of extensive public reading. There is no branch of agriculture of more universal importance than the health of food-producing and utility animals. Dr. Torrance goes fully itno the activities of his branch. "In some directions," he says, "such as the control of glanders and of mange, much progress has been made; the country has been protected against invasion by diseases foreign to it; additional facts have been brought to light by the members of the branch engaged in scientific research, and there has been a marked advance in the division entrusted with the inspection of meat and canned foods." On the other hand, the Veterinary Director General continues, "I have to report a serious outbreak of dourine in the Province of Alberta and continued losses from hog cholera."

Regarding glanders, it was found necessary to slaughter only 353 horses in 1914 as compared with 638 in 1913. In combating hog cholera 9,900 hogs were slaughtered in 1914 at a cost of $61,588.44 in compensation. The figures in the latter instance present a formidable aspect, but, as Dr. Torrance remarks, "As the hog population of Canada is approximately 8,000,000 the loss of even 10,000 is not high." He adds that the disease rarely breaks out a second time on premises where it has been extirpated, that the feeding of uncooked garbage to hogs continues to be often the cause of the initial outbreak, and that the neglect of owners to notify the department of the appearance of the disease is chiefly responsible for its spread. The last remark applies to the initiatory manifestation of all other infectious or contagious diseases. The war against tuberculosis continues with unremitting vigor.

The research and experiments carried on at the different official laboratories is described, and statistical tables given of results, and of the inspection of animals imported and exported and of packing establishments and abattoirs. Import inspections from the United States and Newfoundland in the year ending March 31st, 1914, totalled 29,726 horses, 1,641 mules, 14,747 cattle, 2,3,332 sheep, 374 swine, 822 goats, 22 asses, 8 elk and 5 elephants.

Some two dozen contributions from the chiefs of divisions stationed at different points—inspectors, pathologists, biological experts and superintendents of quarantine stations—with a number of illustrations of animals variously infected, combine to make a most useful and widely interesting report, which can be had free on application to the Publications Branch, Department of Agriculture, Ottawa.

How to Drench a Horse.

The right way to drench a horse is as follows: Back him into a stall; then he cannot back away. Put a running noose in a soft half-inch rope, and place the noose around the upper incisor (pincher) teeth, just inside of the upper lip. Have the knot of the rope come directly in the middle of the front of the upper jaw. Throw the free end of the rope over a beam well above the horse's head. Raise the head and hold it there with the noose and rope. Get the head high enough to prevent medicine from running out of the mouth, but do not put it up so high that the horse will be unable to swallow comfortably. Stand on a chair or box, so that the right hand holding the bottle may insert the neck of the bottle into the right side of the mouth. Then pour in a couple of ounces of medicine, and let the horse swallow that before more is given. Do not grasp and squeeze the horse's throat. This makes it difficult or impossible for him to swallow. Tickle the roof of the mouth with the neck of the bottle or fingers, and swallowing usually follows at once.—New Zealand Farmer."

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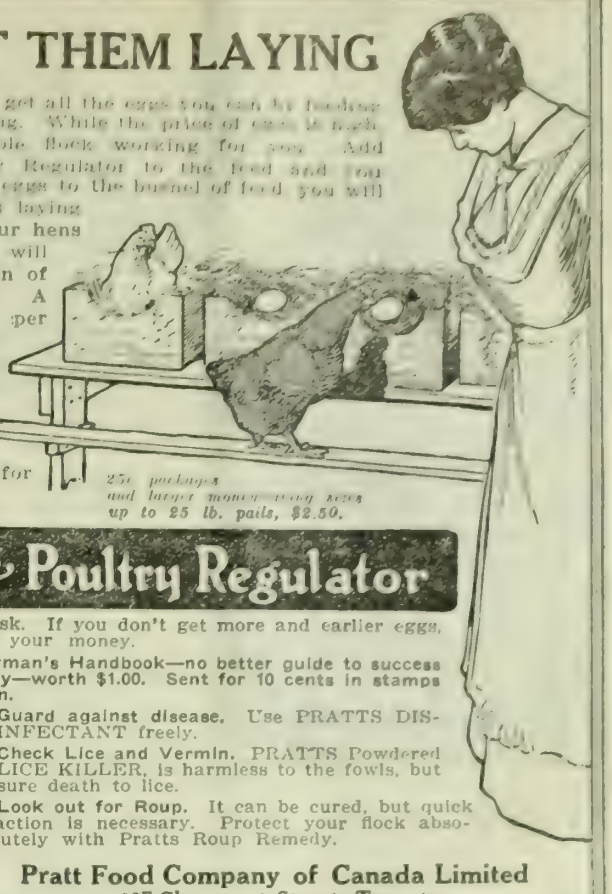

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POULTRY

Under no Condition Should Pullets be Sold as Market Poultry.

Comparing the poultry situation this fall with that of a year ago, we find conditions almost the reverse of those last year. Poultry of all classes was plentiful a year ago, and today there is a scarcity in all lines. Last year prices were low and feed was high and scarce, but this year feed is plentiful and cheap and the price of market poultry is extremely high. It is unfortunate that we should be confronted this year with such conditions because this year, of all years, poultry raising is a paying branch of farm work. With feed so cheap and chickens selling as high as 35 cents a pound for Thanksgiving trade and turkeys the same price, we can readily see where our farmers made the mistake of cutting down their poultry production rather than increasing it.

Winter Eggs Scarce

If this condition would only affect the dressed poultry trade it would not be so bad, but it does not stop with that. A scarcity of market poultry always means a scarcity of winter eggs. The supply of market poultry and that of winter eggs go hand in hand. If we cut down on the number of chickens raised, we are cutting down the number of winter eggs produced, for on the pullets will depend the supply of winter eggs. The rule in rearing chickens is that the chicks hatch about half and half, cockerels and pullets. Hence, if we cut down the hatching in the spring so as not to have so many chickens to sell in the fall, we necessarily cut down the supply of pullets as well.

With markets such as we have in this country it seems too bad that our farmers should have lost sight of the opportunities presented in poultry raising. Of course, wheat stands out as the thing in this country, and a flock of fifty hens looks pretty small beside an acre of wheat, but if we stop to consider which of the two is the biggest gamble we certainly must say that it is wheat. The returns from the poultry yard naturally come in small quantities, but then they are sure, for the prices are always such that there is at least a little profit in it. Last year was an exceptional year and poultry was away down in price, wtih the result that the poor man's table had chicken on it—poultry meat being cheaper than all others. The conserving public took to eating chicken on a larger scale than ever before and comparatively small quantities were carried over in cold storage. This finds us now with hardly any storage poultry on the market and also a shortage in this year's supply and high prices are the only possible result. On the Saturday before Thanksgiving turkeys were selling on the Winnipeg markets at 32 cents to 35 cents per pound for fresh killed stuff, and storage turkeys were selling at 30 to 32 cents per pound. Chickens were all the way from 28 to 35 cents per pound, the former price being for ordinary stuff and the latter for choice milk fed, crate fattened roosters. These prices were too high for the ordinary man to have any poultry at all for his Thanksgiving dinner, but with the shortage the prices were bound to go up. In conversation with one dealer he remarked: "We ourselves are to blame for these high prices because we simply put the farmers out of the business last year by cutting down the prices so hard that they saw it was not paying them, but this year we pay for it. Today, with poultry selling at these high prices, one pound spoiling on us, represents the profit on one carcass. Last year, wtih cheap poultry, the losses were not nearly so heavy on account of the price being so low."

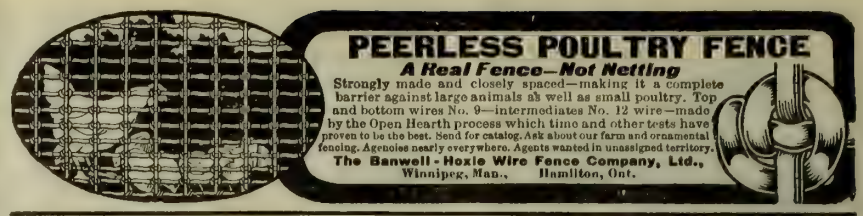
Raise More and Better Poultry.

Already dealers are beginning to look up Eastern conditions to ascertain if they can get their supply of Christmas turkeys there since there are not sufficient in this country this year to supply our own home demand. In view of these facts we urge our farmers to go in for better poultry and more of it another season. With a gradual change to better marketing facilities and an unlimited market demand for home grown products, our farmers would do well to keep their finger on the pulse of their own home trade. They can pretty well tell the condition of the markets one year with another and even if prices are low for the general run of stock, there is always a good price maintained for a well finished and properly prepared product. The only thing to do under adverse conditions is to try and put up a better class article than the ordinary and then secure a better price.

Referring to our Western egg trade I might say a few things which may not sound very good to some of our farmers. Our eggs have quite a reputation already not for their high quality, but rather for lack of quality. The Western egg is without doubt the poorest egg on our Canadian market today and just now, when our eggs should be making a name for themselves in the East and in the Old Country, we must have dealers coming in here and telling us that our eggs are a disgrace to the Canadian egg trade and out of all the eggs in cold storage in two of our cities, they could not find a single carload of really high quality eggs. This is due, to a large extent, to our farmers not knowing how to produce good eggs and also not knowing how to handle them properly. Probably ninety-five per cent. of the population of our cities who are buying eggs from the retail stores depend altogether on the storage eggs.

In view of these facts the only conclusion we can come to is that the price of winter eggs is going to be very high if not higher than ever before. The supply of pullets is low, therefore the supply of winter eggs will be low. It is now too late in the season to start over again, so the farmers must make the most out of what they have. Under no conditions should pullets be sold as market poultry. We again urge the importance of this point. Take what pullets you have now and give them proper feed and care if you wish to get winter eggs. High class new laid eggs are selling now as high as 40 to 45 cents a dozen, with the summer hardly over and judging by the market demands there will be a steady climb from now till the beginning of the new year.

There is no danger of over-doing winter egg production and our farmers can double their flocks of pullets next year without the least danger of over crowding the market. Summer eggs will, of course, be low in price, but even those eggs, if of good quality, will bring a price that will make egg production pay. The West simply has to come round to the point of producing a better class of eggs. Eastern dealers want good eggs and we have in them an unlimited market demand for this class of goods. Just a few days ago another Eastern dealer wanted to buy up a quantity of eggs but he did not dare touch them. He was positively disgusted with the class of eggs we have here in the West. Let us get ready for meeting the demands of the Eastern markets and put forth our best efforts from now on to produce eggs that are second to none on our Canadian markets.—By M. C. Herner, Professor of Poultry Husbandry, Manitoba Agricultural College.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Laying Pullets.

(Taken from a Sagadahoc county poultry demonstration, and from the office of the county agent, H. J. Shaw, Topsham.)

One of the most common questions among poultry raisers is, Shall I keep my yearling hens over, or raise pullets for winter layers?

It is, of course, the plan of most people to have their poultry laying from October until March; the reason for this is the high price of eggs. This is undoubtedly the most profitable time for egg production, as the price ranges from 35 to 60 cents per dozen.

A reasonable comparison of the two ages for egg production is as follows: A healthy and well-developed pullet (and of course it is understood that only birds of good constitution and health should ever be put into a laying pen) will demand, if from a good laying strain, the price of $1.25 each by the first of October. Figuring with this price as the initial cost, a pullet starting to lay the first of November, with the average price of eggs at 48 cents per dozen, will have to lay 42 eggs to pay the first cost. A well-bred pullet wil ordinarily lay as often as every other day; therefore, 82 days, or less than three months, laying, will pay the bill. The results of nine months of off-and-on work and the value of the meat the end of the year is now left to pay the keeping costs, such as feed, labor, interest, cost of housing, and profit.

With a yearling fowl, after a summer of good work, when prices are only fair, they will go into the molting stages. This period of molting will vary with individuals, but will usually commence along in June or July, and last for a period of four months. Most hens will lay more or less eggs during the early stages of this molt, while the feathers are dropping fast, and the new ones growing slowly, but nearly all stops when the feathers are growing rapidly. This period of molt and work of growing the new feathers will run along late into the fall, the time for which they should be preparing themselves for winter laying. With these conditions it cannot help cutting down the winter egg laying, as you will notice in

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the following table. It is possible by heavy feeding to encourage the hens to lay more eggs during the early stages of the molt, and also to put them into better condition for market at the time they stop laying.

This proposition of forcing the yearlings for eggs and meat producion during the first stages of molt, then marketing at the proper time according to market conditions, and then having a flock of well-bred, early-matured pullets to take their place as winter layers, is supported by the following table from the egg-record sheets of A. H. Donnell of West Bath, a Sagadahoc county poultry demonstrator.

These yearling hens did a fine summer's work and were in good condition in the fall, but owing to the quarantine on live poultry they were not marketed, nad, therefore, reveal the following figures, which I consider of great value:

Comparison of Winter Egg Production, November 1 to April 1.

PRODUCTION

	Hens (225)	Pullets (225)
November	383	757
December	624	1273
January	1034	1442
February	1344	2319
March	2839	3709
	6204	9500

Value of Eggs

Hens	Pullets	Adv. of Pullets
$15.68	$30.87	$15.19
24.96	48.96	24.00
26.71	37.25	10.54
31.36	54.11	22.75
65.00	77.25	22.25
$153.71	$248.44	$94.73

These figures are authentic, being taken from the pen egg-record sheets and compiled by the agent personally. —Maine Farmer.

For Laying Hens.

The feeding formulas that appear at the bottom of this column are being employed in the fifth laying contest now in progress. By simply varying the proportion of grain to mash, it is believed that these rations can be easily adapted to a number of different breeds. During the first two years the grain ration was fed in a well known automatic feeder which was open a part or nearly all day depending somewhat on daily climatic conditions, but largely on the season. While the hoppers gave fair satisfaction, the management of the contest feels that an experienced man always on the job is able to keep in closer touch with the birds and get better results by hand feeding and in consequence the latter practice is now being followed. During the greater part of the year, the principal feed is given about four o'clock in the afternoon but in winter one or more light feeds should be given in the morning to induce exercise. Dry mash is kept before the birds at all times in earthenware hoppers which are supplied with a wire grate to prevent the feed from being scratched out and wasted. It will be noted from the mash formula below that both fish and beef scrap are used; if either is omitted the other should be doubled. If sour milk can be supplied abundantly, the meat part of the ration may well be reduced by one-half or more. Grit, shell, and charcoal are supplied freely in rectangular boxes with three compartments each containing about a quart. Green food during the winter consists principally of mangel beets fed daily; in summer, the birds have grass runs. Rape and Swiss chard are grown to supplement the summer supply of natural green food.

Dry Mash

Wheat Bran	100 pounds
Corn Meal	100 pounds
Ground Oats	100 pounds
Flour Middlings	100 pounds
Fish Scrap	50 pounds
Beef Scrap	50 pounds

Scratch Grain.

Wheat	100 pounds
Cracked corn	100 pounds

Dust Baths.

Laying hens must have their morning dust bath if they are to lay the maximum number of eggs through the winter. It is a necessary luxury for them. By its use they are enabled to rid themselves of mites and to remove all scales and dirt from the skin.

Lice and mites do their greatest injury to the fowls at night while on the roost. Instinctively they look for a place to dust in the morning. Do not force your hens to dust in the dropping or feed litter. During the summer they will usually find their own dusting place such as the road or in the shade of trees and shrubbery, but in the winter it must be provided for them. Nail an old grocery box in one corner of the house. Elevate it above the floor so that it will not get filled with straw or litter and put in six or eight inches of dusting material. During moderate weather their box may be placed out in the pen.

To be effective the dusting material must be very light and dry, and fine enough to fill the breathing pores of the mites and lice. The finer the better.

A good dusting material is composed of equal parts of fine sand, road dust, and sifted coal ashes. A cupful of kerosene and a handful of sulphur thoroughly mixed with the dust will make the dust bath still more effective.—C. S. Anderson, Colorado Agricultural College, Fort Collins, Colorado.

Forcing Late Pullets.

Are your pullets laying? Pullets that do not begin to lay by the time freezing weather sets in will usually wait until spring. This means a dead loss for several months. The average poultryman cannot afford this loss if he is raising poultry for egg production.

Pullets of the Mediterranean breeds hatched not later than May 1st, and that have been reasonably well cared for during the growing period will be laying before early winter.

It sometimes happens that force of circumstances necessitate late hatching and it is these pullets that must be pushed along to get them ready to lay in the fall.

Feed a ration of high protein content including such feed as beef scrap, bran, middlings and oil meal. If skimmed or buttermilk is available, it will be of value. Give the birds free range whenever it is possible If they must be confined supplement their ration with some green feed such as sprouted oats, green alfalfa, beets, cabbage, etc. Birds fed such feeds as above, kept free from disease, lice and mites, and given plenty of exercise will develop amazingly.

There is still some time before severe winter weather. Try forcing your late pullets and see the effect it will have on the winter egg basket.

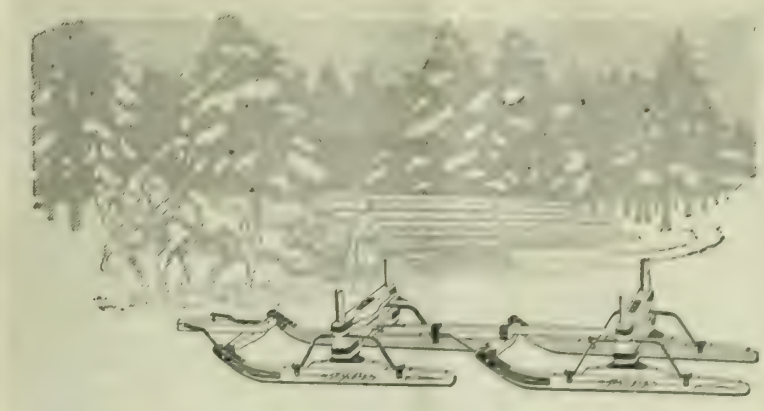
Great Britain Out for Canadian Eggs.

Increased receipts and increased exports of eggs are reported on the Montreal market during the past week, as compared with the same week last year. No special change took place in regard to prices, though the falling off in strictly new-laid eggs sent the price up in that case. The same condition as regards strictly fresh eggs, applies to Boston market, the difference being that there is absolutely no export enquiry whatever, as compared with splendid possibilities for export from Canada to Great Britain. Montreal is advised from both Glasgow and London that considerable shipments of Canadian eggs will be required over there. The advice includes the caution that prices that are prohibitive will lose the trade entirely, this being worth the consideration of all shippers, and, running parallel as it does with the refusal of the British to accept Danish butter at demanded prices indicates that so far and no farther will the heavily war-taxed consumers of Great Britain go for their food requirements. The British demand is being encouraged by the Canadian government with the aim in view of making Canada the Mother Country's chief egg producer. British imports are now greatly above last year, but by a long way yet back to their proportions of 1913.

The Nest Boxes.

A matter requiring careful attention, but which is frequently overlooked is the nest boxes. These are best made of bottomless boxes, about fifteen inches square and eighteen inches high, standing upon a shelf a few inches above the ground. Fixed nest boxes should never be employed, as they are so difficult to clean, and if the greatest care is not exercised, will harbor vermin and the like. They should be a few inches from the ground, because when on the floor there is a danger of the hens eating or the rats removing the eggs. There should always be a sufficient number as when too few are supplied the hens lay about the house, and in this way the vice of egg-eating is encouraged. The nest boxes should be placed in the darkest part of the house, preferably below the window, as the less the birds are disturbed while laying the better. More than this, if facing the door or the window, it would mean that during hot weather the sun would shine directly on the eggs, possibly starting the germ into activity, at any rate doing the eggs no good. Straw is the best material with which to litter out the nests, and oat straw is better than either wheat or barley, being more pliable. Hay is not so suitable as straw, as it is a retainer of heat, and becomes foul sooner than the latter.—Middlesex.

Pullets should start to lay before the cold weather and they should be in their winter quarters several weeks before they begin to lay. Get their house ready early in October, sort out the early pulets and put them in by the middle of October at the latest. It is the early eggs that pay, and if pullets do not begin to lay before December they will not likely start till near February.



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FOR HOME AND COUNTRY

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"You Got T' Salute."

An Appropriate Story of Neutrality and Patriotism.

(By Ellis Parker Butler)

Mike Corrigan, his shirt sleeves rolled to his shoulders, was washing the grime from the great strands of muscles that made his arms look like those of a Roman gladiator. For his ablutions he used the kitchen sink, filled to its brim with cold water, and a bar of brown laundry soap. Having cleansed his arms he ducked his head, bringing it out of the water with a noise like unto the puffing of a porpoise. He groped for the roller towel and rubbed his head.

Mrs. Corirgan, standing over the two-burner gas-stove, continued her story of how Grossmeyer, the little German tailor next door, had assaulted little Pat with a barrel stave. From time to time she turned, waving the fork with which she was stirring the frying potatoes, and declaimed against Grossmeyer.

"An' pa," piped Patsy, from his chair at the kitchen table, "he went an' called me a dirty Irish, he did, pa. He lammed me with a barrel stave and he said: "Git out of here, you dirty Irish."

Corrigan turned from his roller towel on which he was wiping his mighty arms. Even Patsy was frightened by the black look on his father's face, for Patsy was not free from a fear that his conduct, if investigated too closely, might not meet with his father's full approval. More than once before, when his father had gone out to wreck quick vengeance on some oppressor of his offspring, the avenger had returned to mete out the punishment where it belonged—on the prime instigator of the whole trouble.

"An' I only called him a Dutchman," whined Patsy. "All I says to him was, 'Aw, you leave me alone, you Dutchman!'"

"Say no more!" said Corirgan grimly.

"An' what harm was Patsy doin' t' th' brute?" asked Mrs. Corrigan spitefully. "Th' poor bye did nawthin' but climb over th' fence t' fetch back his ball, like byes have did since Ireland was free, an' th' Dutchman wint an' assaulted him over th' seat iv th' pants wid th' barrel stave. If a poor lad cannot fetch his ball whin—"

"Say no more!" said Corrigan.

"An' ye did no harm at all t' his cabbage plants, did yet, Patsy?" asked his mother.

"No," said Patsy sullenly. "I wasn't doin' nothin' to him."

"Say no more!" cried Corrigan. "I care nawthin' for his barrel staves or his cabbage plants. 'Dirty Irish' he called us, did he 'Tis gettin' so th' whole world thinks ut can tread awn th' Irish race. 'Tis gettin' so th' wops an' dagoes an' squareheads an' Dutch in th' world make free t' insoolt th' Irish nationality. D' ye mind th' job on th' p'leece force Hogan thought he might me gettin' for me?"

"I do that," said Mrs. Corrigan sympathetically.

"A furriner be the name iv Schwartz got ut," said Corigan.

"For th' love iv St. Patrick." exclaimed Mrs. Corrigan with horror. "A Dutchman awn th' p'leece force!"

"No niss," said Corrigan, hiding his anger under a calm exterior. "An' d' ye know who they put over me for a boss this r

"Haggerty " asked Mrs. Corrigan, although she knew, from her husband's tone that this could not be.

"Haggerty? A dago ne name iv Morosini. 'Tis from a dago I must take me orders, mind ye," said Corrigan, bitterly. "Anny wan can insoolt the Irish these days."

"Hear that now|" cried Maggie.

"But be hanged if I'll accipt an insoolt from anny sawed-off Dutch tailorman that iver was," declared Corrigan. "Ut takes nine tailors t' make a man, an' nine Dutchmen t' make wan Irishman, an' as sure as nine times nine is ninety-nine I'll not be insoolted be th' ninety-ninth part iv a real man. Not whin he lives nixt door t' me, Maggie. In a bit there'd be no livin' in th' neighborhood at all. Th' Irish w'u'd be th' joke iv th' place."

"An' ye s'u'd see Missus Grossmeyer sailin' past wid her nose in th' air an' thim red an' blue roses awn that new hat she—" Mrs. Corrigan began.

"Say no more|" said Corrigan, taking his seat at the kitchen table. "'Tis man's work. L'ave ut t' me."

For a moment there was silence.

"An' you," said Corrigan suddenly to Patsy, "kape out of th' Dutchman's lot, d' ye mind? Th' nixt time I hear of ye in ut I'll wale th' hide off ye!"

"He was but fetchin' his ball back, as anny lad—" Mrs. Corigan began.

"Hush!" said her husband sternly. "I have given th' lad me orders. I'll have no talk over thim. Ye know nawthin' iv th' complexities iv inthernational relations arisin' from th' insoolts iv wan nationality to another, Maggie. Th' question is not, 'Sh'u'd I wale th' bye for trispassin' into th' Dutchman's cabbage patch, or manhandle th' Dutchman for chasin' th' bye?' 'Tis a more seryus matter intirely. Th' Dutch have insoolted th' Irish, an' 'tis a matter iv inthernational enormity for wan nationality t' insoolt another wan."

"What'll ye be doin' t' th' tailorman, Mike?" asked Mrs. Corrigan with tremulous awe. She was of the good Irish stuff that joys in sending the loved one into the fray but weeps while sending him.

Corrigan laid his fork across his plate and tapped the red tablecloth with his stubby forefinger.

"Mayhap I'll be doin' nawthin' t' him," he said. "Time was whin I w'u'd have clumb over th' fince an' murdhered him for whackin' th' bye wid a barrel stave, but that was befoor I was wise t' th' law iv internationality. For th' spoken word iv insoolt t' th' Irish as riprisinted by me youthful son Patsy there's but wan reparation I can accipt. Th' Dutchman must saloot th' flag!"

For a moment Mrs. Corrigan looked blank.

"Saloot th' flag?" she queried "What mean ye by saloot th' flag, Moke?"

"Twinty-one guns, no liss," said Corrigan. "T' reparate for insooltin' th' Irish th' Dutchman must shoot off a saloot iv twinty-one guns t' show his rayspictfulness t' th' green flag iv Erin. Or what I'll do to him will be plinty for him t' remember as long as he lives."

"Hear that now!" exclaimed Maggie. "An' what if th' tailor-man cannot fin' twinty-wan guns, Mike?"

"Don't be showin' yer ignorance befoor th' bye," said Corrigan. "Be th' diplomatic term 'twinty-wan guns' is meant twinty-wan shots from wan gun, if ye cannot get anny more iv 'em. I doubt if th' Dutchman has even wan gun. D' ye know where is th' pistol an' th' cartridges I bought that Foorth iv July befoor Patsy was born, Maggie "

"At th' bottom iv the oak chist back iv th' bed, Mike."

"Fetch thim," said Corrigan, "an' while yer ma is gittin' thim, Patsy go up t' th' attic an' bring me th' green flag I carried last Patrick's day whin I marched wid th' Timothy J. O'Hara Association. Make haste."

For several months the relations between the Grossmeyers and the Corrigans had been strained. The Corrigan goat, wandering into Grossmeyer territory and eating Mrs. Grossmeyer's geraniums the first warm day of spring, had led to a warm diplomatic interchange between the two ladies Mrs. Grossmeyer maintaining the right of territorial inviolability while Mrs. Corrigan pleaded the natural right of goats to wander at will. Mr. Grossmeyer, intervening, erected a fence between the two territories, the fence being composed of sections of old tin roof, barrel staves, laths, chicken wire and some odd lengths of rusty barbed wire. The fence was considered an unfriendly demonstration by the Corrigans, but nothing was done about it and Mr. Grosmeyer made his garden and set out his cabbage plants unmolested, until Patsy Corrigan began to bat his ball over the fence and climb over the fence into the garden to retrieve it. In the meanwhile the feelings of Mrs. Corigan had been hurt by the haughtiness with which Mrs. Grossmeyer flaunted her new hat, leading to more words on a day when the wind was Corriganward and Mrs. Grossmeyer beat a carpet to windward of Mrs. Corrigan's clothesline full of recently washed whitewear. Mr. Corrigan had kept aloof from the increasingly impossible situation until now, when it has culminated in an assault on Patsy and the insult to the Irish nation.

Mr. Corrigan glanced from the kitchen window and saw that Mr. Grossmeyer was working in his garden. Mr. Grossmeyer was kneeling on an old sack which he hitched along as he progressed in his work of setting out tomato plants. His tools were a trowel and a short-handed rake and he had at his side a box containing the tender young tomato plants. To Mr. Corrigan there seemed no possible difficulty in the work he had in hand The little tailor could make no dangerous resistance; it was merely a matter of presenting the ultimatum, forcibly showing the little tailor that an outraged Corigan could beat him to a pulp if necessary, and then dictating the form and manner in which the salute was to be given. To be ready for prompt action if need be Mr. Corrigan rolled up his sleeves above his elbows. Mrs. Corrigan and Patsy returned with the pistol, the cartridges and the green flag with the golden harp, and, bidding the two keep within doors, Mr. Corrigan took the weapon, the ammunition and the colors and stepped into the back yard.

It was a warm evening and Mr. Grossmeyer had laid aside his coat and vest, hanging them on the fence. His collar and tie hung from the short crossbar of the nearest clothes-post in his yard, and he would have been peaceful and happy but for the long-stemmed pipe that hung from his lips as he worked.

Mr. Grossmeyer was a small man and slight of build, but his black pompadour was brushed straight upright in a style that sugegsted defiant independence. His mustache was equally aggressive, being turned sharply upward at the ends like those of a well-known war lord. For important oc-

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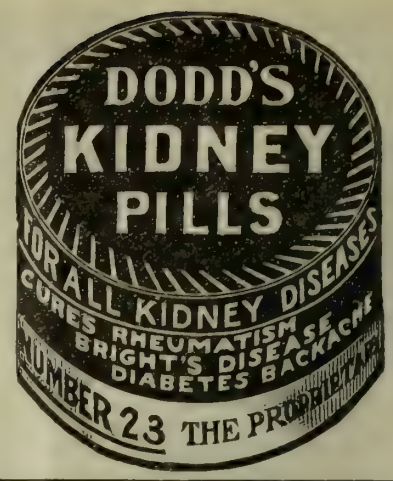

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casions he cultivated a glare of the eye that would have cowed a lion, but for all this he was the meekest and gentlest of little tailors except when driven to desperation and then he was apt to do nothing more violent than weep tears of rage. His pipe was now driving him to desperation. From minute to minute he puffed violently at the pipe, but his only reward was a sickening gurgle. From time to time he sat back on his knees, and felt in all his pockets for a match, and found none.

"Ach!" he exclaimed, and puffed at the pipe again.

In the top of the bowl the smallest possible spark remained, but Mr. Grossmeyer's most violent puffings would not induce it to spread. He put out his hand and grasped a straw, inserting it carefully in the pipe stem. Through his spectacles his eyes glared at the pipe. Carefully he pushed the straw, urging it into the stem, and then as carefully began to withdraw it. Half the straw came out. The other half, lost in the long tunnel of the pipe stem, remained. Mr. Grossmeyer uttered an ejaculation of deep condemnation. He tried the pipe. It was Dutchman can do whilst Corrigan has his healt' an' stren'th. In th' name iv all th' Irish in Ameriky, Grossmeyer, thoroughly and everlastingly plugged.

"Ach, schrecklich!" he cried and threw the pipe violently over the fence. It struck Mr. oCrigan in the chest.

"Ye murdersome divvil!" cried Mr. Corrigan angrily, and Mr. Grossmeyer looked up to see Mr. Corigan leaning over the fence, the green flag of Ireland in one hand and a glittering revolver in the other. It was no time for parley. Mr. Grossmeyer instantly raised both hands.

"Don't shoot!" he begged. "I gif up! Don't shoot!"

"Ye little sawed-off, d'ye think I'd be shootin' th' likes of ye?" exclaimed Mr. Corrigan with disgust. "D' ye honor yerself be thinkin' that Mike Corrigan w'u'd fetch a pistol t' kill ye? If 'twas killin' ye I was after I'd but crush ye between me thumb and finger."

"As a favor I ask you, don't shoot!" begged Mr. Grossmeyer. "Please don't shoot!"

"An' didn't I tell ye I wasn't comin' t' shoot ye?" cried Mr. Corrigan angrily. "D' ye mean t' say I'm a liar, Mr. Grossmeyer? First I'm a dirty Irish, an' nixt I'm a liar, an' what will I be nixt, I want t' know Put down yer hands, an' quit exposin' yer cowardice, Mr. Grossmeyer."

"Me, Grossmeyer, a coward, hah!" he shouted. "Because I stop me think off my wife yet, you call me a coward, yes? And already I make me an application today for such a life insurance, und I ain't got it yet, und I am a coward| Hah! You make me a shootings, und I am dead mit no policy insurance yet, und I am a coward! Und because I don't—Ach, Gott! Shoot! Shoot!"

"I do not want t' shoot ye!" said Corrigan, pronouncing each word slowly and distinctly. "Will ye listen t' me? This afternoon me bye Patsy—"

"Und it is me I am a coward!" cried Grossmeyer. "Mit a gun you come shooting me, und baseballs over de fence coming every day yet, und I am a coward, und—und walking on my cabbage plants, und—und pistols, und —und shootings mit guns—und—und cowards."

He was inarticulate with rage.

"Will ye be still?" asked Corrigan. "This afthernoon me bye Patsy clumb over th' fence t' fetch his ball—"

"Und shootings, und—und guns, und —und Annie gets no policy insurances —und—und I am a coward."

"He clumb over th' fince," said Corrigan, "an' ye slatted him wid a barrel stave—"

"Guns, und—und shootings, und—und I am a coward!" wept Grossmeyer.

"An' I'll say nawthin' iv why ye slatted him," said Corrigan, "but whin ye insoolt th' whole Irish people 'tis time th' Dutch learned a lesson. Ye have insoolted th' flag iv Ireland be th' words an' phrases ye uttered, Mr. Grossmeyer."

"Und I am a coward!" said Grossmeyer, beating his breast.

"Shut up!" shouted Corrigan. "I don't care a hang if ye are a coward or the king iv Germany. Ye insoolted th' Irish nation, and that's what no I demand reparation for th' contamination ye have done th' isle iv Erin. All iv ye undesirable furriners are gettin' too haughty t' live wid. Th' ind has come. For th' ignominy ye cast awn th' min iv the old sod ye must saloot th' flag, Grossmeyer!"

As if a spring had snapped Grossmeyer's mouth fell open. He stared at Corrigan. He was dazed. He could have believed many things of his hot-headed neighbor, but this he could not believe. He, a German, must salute the flag of a Corrigan? It was so impossible that he could not speak. Nations might salute; kings and presidents, when at fault, might salute, but who ever heard of a private citizen, standing on his own land, being ordered to salute? It was grotesque. Impossible! Before he would raise his hand to his brow in salute to the green flag he would let Corigan shoot him as full of holes as a sieve.

"Befoor I climb over th' fince an' choke th' heart out of ye," said Corrigan, "give me th' answer—will ye saloot th' flag or no? Will ye saloot or take th' consequences?"

Grossmeyer kept his eye on the pistol. He moistened his lips but no words came forth. He was a brave

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little man, but a pistol is a very deadly weapon and there is no acounting for the vagaries of an Irishman. Perhaps, in Kilgarry or wherever Corigan came from, it was the custom to shoot neighbors for nothing. Grossmeyer did not know.

"Twinty-wan guns!" declared Corrigan. "Will ye shoot off th' twinty-wan guns iv saloot usual in reparative circumstances like unto this, Grossmeyer, or will I climb over th' fince?"

"Sooner I would be dead as salute mit twenty-one guns," declared Grossmeyer angrily, his speech returning in a rush.

"An' that's what ye will be," said Corrigan meaningly. "I give ye 'till I count tin, Grossmeyer. Wan—two—three—"

Corrigan put one leg over the fence at the place where it was free from barbed wire. It was evident he meant business. Grossmeyer cast a glance toward his house. Flight was impossibel.

"I don't know what iss it, saluting mit guns," he temporized. "Maybe I salute yet when I know what iss it. Such quickness you make it, mit salutings und guns und flags. How should I know what iss it?"

"Ye thick head!" said Corrigan. "Ye know nawthin' at all. Here is th' green flag ye insoolted, an' here is th' gun t' shoot th' saloot, Mr. Grossmeyer, sir. Ye will put th' flag at th' top of yon clothespost an' shoot off the pistol twinty-wan times, in honor of it and in apology t' th' Irish race, Mr. Grossmeyer, sir. Or ye'll git what's comin' t' ye."

Mr. Grossmeyer blinked. It was an admirable imitation of stupidity.

"Mit der pistol I shoots me twendy-one times, yes?" he asked.

"In the air," explained Corrigan. "In saloot t' th' flag ye will put on th' top iv th' clothes-post."

"Und why shouldn't I shoot der pistol " asked Mr. Grossmeyer. "I makes me no troubles aboud it. Gif me der pistol."

Mr. Corrigan handed the pistol across the fence. He had out the flag too, but Mr. Grossmeyer did not take it. Instead he poitned the pistol full at Corigan's breast. He grinned until the tips of his mustaches almost touched his eyes.

"Raus mit you, quick!" he cried. "Sooner I shoot you as a dog already."

"Ye'll shoot nawthin' wid that pistol 'til ye put ca'tridges in ut," said Corrigan calmly, "for 'tis as impty as a church. For such tricks I sh'u'd come over an' beat ye up, Grossmeyer, but I l'ave personalities by 'til ye have given th' saloot. Are ye ready. Three I have counted. Four—five—"

Grossmeyer turned pale. He looked into the barrel of the pistol. Thus closely inspected the weapon seemed far from well kept. Masses of rust clogged the barrel and prevented the cylinder from revolving.

"Such a pistol!" said Grossmeyer, fighting for time. "Sooner I shoot it it busts maybe, und kills somebody. Such rusted pistols. Und you should ask me mit such pistols to salute!"

"Hand me th' gun!" ordered Corrigan. He examined it closely. It was not indeed, a safe looking firearm. He tried to force a cartridge into one of the chambers, but in vain.

"Have ye a betther wan iv yer own?" he asked at last.

"Me? I should have a pistol|" lied Grossmeyer. "I should keep pistols und guns und—aber tomorrow," he added brickly, "maybe I could from Gluck his duck-shooting gun get it. A fine gun iss it, mit shells und—und—"

"Mike! " called Mrs. Corrigan from the back door. "Are ye goin' t' listen t' th' hot air iv the Dutchman all night? I've heard no shootin'. Kape on an' he'll be makin' ye think 'tis you that's t' saloot."

"Have no fear, Maggie," said Corrigan. "I am but considerin' where I can fetch a gun from."

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Mrs. Corrigan came into the yard, and Mrs. Grossmeyer, who had been watching her husband from her own kitchen window, ready to take a hand in case any violence threatened him, came also, as rapidly as her weight and size allowed.

"Vot iss?" she asked.

"I am but askin' ye'r husband t' saloot th' flag because iv th' insoolt he placed upon ut, Mrs. Grossmeyer, mam," said Corrigan with forced politeness. "I am but askin' the customary saloot iv twinty-wan guns, mam. I trust ye have no objections t' ye'r husband performin' th' usual ceremony iv reparation in such cases made an' provided, Mrs. Grossmeyer. For if ye have," he added, "'twill be me duty t' lay rough hands upon him should I have t' lick all th' furriners in th' neighborhood."

"Vooden-head!" Mrs. Grossmeyer exclaimed, glaring at her husband. "Haf you such a fool been to insult it the American flag, hein? Mit wars going on und all? Sooner you go by Mexica und be a rebel as you do it!"

"Annie! Nefer haf I insulted der American flag!" said poor Mr. Grossmeyer, appealingly. "I should insuld der American flag, yes Am I crazy, yes?"

"'Twas the Irish he insoolted, mam." said Corrigan haughtily. "An' 'tis th' flag iv Ireland he must be salootin'."

"Ach!" exclaimed Mrs. Grossmeyer with disgust. "Always, Mrs. Corrigan for such nonsense iss it the men make such troubles between good neighbors yet. For such German flags und Irish flags we should to have fightings! Such a crazy business! I should worry if Grossmeyer salutes a flag! Better I should worry he wastes time when he should be planting tomato plants."

Mr. Grossmeyer looked at his wife in amazement. He had counted on her warm support, and she deserted him for the enemy.

"Make such a salute, Grossmeyer," she ordered, "like Mr. Corrigan wants it. I fetch me der German flag out."

"We nade no German flag, mam," said Mr. Corrigan. "I have th' green flag here, as ye may see."

Mrs. Grossmeyer had turned away; she turned back again.

"So?" she queried, letting her placid face show the utmost surprise it was capable of registering. "Maybe it iss a new kind of salute I don'd hear aboud yet. I am only a vomans, Mr. Corrigan. But always by the newspaper I read how it must be one salute goes mit another salute. Always! For such insults Mexico could salute the American flag, yes, und right away should the Ameircanish shooters salute the Mexicanish flag. Odor it iss no salutes at all, schust gun shoodings. One should to salute like saying 'I make apology for what I did it!' und right away other should salute like saying 'Much obliged, I accept such an apology like you make it! ' Maybe it iss a new kind of salute you hear about, Mr. Corigan, mit only one salutings?"

She was suave. She was polite. She was apologetic. But with all that she was annoyingly ironical. Mr. Corirgan coughed uneasily. Nothing annoys a man more than to go forth to uphold his dignity and then discover that he is being ridiculous. Mr. Corrigan's face flushed. He suddenly felt that his knowledge of international affairs was founded on sand. He ignored Mrs. Grossmeyer.

"You got t' saloot!" he shouted at Grossmeyer. "Wan flag, or two flags, or sivin hundred thousand flags makes no diffirence to Corrigan I do not care a hang what may be th' formality iv proceedin', ye have insoolted th' Irish an' ye have got t' saloot!"

"|Sure, you should salute Gross-

meyer," said his wife. "Und if Mr. Corrigan likes one flag salutings, you should care! Iss it your business. Grossmeyer, if everybody laughs at Mr. Corrigan because of one flag salutings? No, Grossmeyer! Salute it like Mr. Corrigan should want it."

"I got me no such pistols und guns," said Mr. Grossmeyer meekly.

"Right away I go me by Kilmer's saloon und borrow a pistol," said Mrs. Grossmeyer. "Und next time you should not make such insults to neighbors. You make me ashamed, having such salutings to make. Twenty-one und twenty-one iss forty-two cartridges I must get, yes? Und right away we get arrested for shooting guns inside the city limits, maybe! Unless Kilmer could fix it. He's got plenty pull, yet. I come back, quick!"

"Anyhow," said Corrigan grimly, when Mrs. Corrigan disappeared, "you got t' saloot, Grossmeyer!"

"Salute, hah!" cried Grossmeyer, "I salute me der Irish flag und you salute you der German flag. Sure I salute! Because you should be a bruiser und a bigger man as I am I salute der Irish flag, but I don't mean it. Und you salute der German flag. I salute and don't mean nodding und you salute und mean it. Sure! All right! An Irish salutes der German flag! Fine!"

"Now, fer that," said Corrigan, narrowing his eyes, "be hanged if I saloot anny Dutch flag that ivir was!"

"You gotto salute,' 'said Grossmeyer with irritating calm. "Like Annie says it is so iss it. Ven you don'd salute back again, I could to salute a millionen times und it means noddings! Sure, you got to salute! Oder everybody iss laughing mitt you."

"Mike!" said Mrs. Corigan. "Why don't ye jump over th' fince an' have done wid him?"

"Lave be!" cried Corrigan angrily. "He's got t' saloot."

"Und you got to salute!" said Grossmeyer.

"Nivir in th' worrld will I saloot th' Dutch flag!" declared Corirgan. "So help me all th'——"

He stopped short. Mrs. Grossmeyer accompanied by Kilmer, six barroom loafers, fifteen or twenty small children of varied nationalities and such of the adult neighbors as had happened to be at their front gates, entered the Grossmeyer yard. Mrs. Grossmeyer was in the lead and Mr. Kilmer, bearing a large American flag and a steel blue revolver followed close. He was red from the speed he was making, for he was a huge mount of a man, blue-eyed, tow haired and with great puffy jowls. The imperfect information of proceedings in contemplation had resulted in a sudden rumor that Grossmeyer and Corrigan were about to fight a duel with pistols and that Kilmer had come to see fair play, bringing — probably — the American flag to wrap around the corpse of the defeated duelist. The interest was intense.

"Stand back!" said Kilmer to the crowd. "What's this nonsense Annie has been telling me? What do you mean by trying to make Grossmeyer salute that Irish flag you're so free with?"

"He insoolted—" began Corrigan with the respect due to the leader of "de tenth" and boss of the lower end of town.

"Never mind about that!" said Kilmer. "What do you mean by making a German salute an Irish flag? And what is this nonsense about making Corrigan salute your German flag, Grossmeyer? How did you vote last time, Corrigan?"

"Straight," said Corrigan, "but, for all that, he's got to saloot—"

"And how did you vote?" asked Kilmer, pointing an accusing finger at Grossmeyer.

"Same like you toldt me," said Grossmeyer, "but ven I salute so must he salute. Odor, ven he does not salute—"

"You bet you'll salute!" puffed Kilmer. "You'll both of you salute, and mighty soon, too."

"Fer th' insoolt he did t' th' Irish—" Corigan began, but Kilmer stopped him short.

"For th' insult, whatever it was, he'll salute!" said Kilmer. "For trying to bulldoze a German into saluting your green flag you ought to be chased out of the ward. And you, Grossmeyer, you ought to know well enough that no Irishman would stand for being made to salute your German flag. Now, listen to me. I won't have this sort of foolishness in my ward. The next time you get in a row, come to me. You're both ignorant. You don't know what you're talking about. You are acting like a couple of children."

"He's got t' saloot—" said Corrigan sullenly. "For insultin' me he's got t' saloot me flag—"

"And you," said Kilmer, shaking his finger in Corrigan's face, "don't know what your flag is! Why, you poor ignorant fellow, you're an American. You're a full-naturalized American citizen. You with your Irish flag, and Grossmeyer with his German flag! You make me sick. Here's your flag, the both of you!"

He rammed the lower end of his flag-pole into the soft soil and let the stars and stripes wave indolently in the slight evening breeze.

"Now, then!" he said. "You've both got to salute! Grossmeyer's got to salute Corrigan's flag, and Corrigan's got to salute Grossmeyer's flag, and there's the flag."

"Sure," said Grossmeyer with a grin, "I salute me dot flag all night yet mit pleasure!" and he put out his hand for Kilmer's pistol. Kilmer counted.

"Nineteen! Twenty! Twenty-one!" he said, keeping track of the shots.

"Give me th' gun,' 'said Corrigan, good naturedly, 'till I accipt Mr. Grossmeyer's apology t' th' citizens iv th' United States located awn this side iv

(Continued on Page 134)

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Of course, we are prepared to qualify either men or women to take advantage of their opportunities, and you can enter at any time.

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THEY'RE FINE FOR KIDDIES —

You should always keep a bottle of Chamberlain's Stomach and Liver Tablets on the shelf. The little folk so often need a mild and safe cathartic and they do appreciate Chamberlain's instead of nauseous oils and mixtures. For stomach troubles and constipation, give one just before going to bed. All druggists, 25c, or send to CHAMBERLAIN MEDICINE CO., TORONTO 10

CHAMBERLAIN'S TABLETS

Send in 5 New Subscribers to the Maritime Farmer at 80c each, and get a beautiful piece of Cut Glass or Silverware.

Health.

Foods That Give Bulk.—All vegetable foods contain more or less cellulose, but the amount differs very greatly. This element, has already been mentioned, is highly necessary as a means of securing normal bowel action. Indeed, bulk is not simply in the food itself, but in the residues left behind, after the absorption of the nutritive portions of the food, is of first importance. This quality of food is even more important than the antiseptic properties, for the reason that putrefactive bacteria may always find in the bile and other intestinal secretions abundant material to support their growth, provided sufficient delay occurs to encourage putrefactive changes. The thing most necesary in the prevention of putrefaction is rapidity of movement of food residues and body waste along the intestine to the exit. Fine flour bread should be wholly discarded from the bill of fare, giving way to bread or biscuit made from whole-wheat meal or rye flour. Wheat meal and bran prepared from thoroughly washed wheat should be used, for both contain enormous quantities of dirt and bacteria, which are especially harmful to persons suffering from constipation.—Dr. Kellogg.

Hints for Bay's Bath.—The temperature for the bath is determined by age; screens form draughts. Also, there should be plenty of water, in order that the little body should be completely covered and not left with a considerable portion above the level of the but it is necessary that it should be given to infants and quite little children in a warm room, protected with warm water to feel by contrast the cold. The temeprature of an infant's bath should be from 95° to 100° Fehr., and this must be tested always with a bath thermometer. This is a point which cannot be too strongly insisted upon, as cases of harm occur from the delusion that a nurse is able to gauge the temperature accurately in any other way. Also—and a most important point—a little cold water should always be put in the bath first. Neglect of this simple precaution has led to trouble, for a layer of hotter water may easily get left at the bottom of the bath when the temperature of that above has been satisfactorily regulated, with the result that the unfortunate baby is put down into water of possibly scalding heat. This can never occur if the "cold water first" rule is religiously followed. By the end of the first month the temperature should have dropped to 95 deg., and from then unwards must be gradually lowered until at six months it is 90 deg. Fehr.—"Queen."

Beauty and Health.—Health is the foundation of beauty. To be really beautiful, one's beauty must be more than skin deep. Do not be satisfied with the beauty that is deep enough merely to deceive the superficial onlooker. It was Aristotle who said that beauty of figure is far more to be admired than mere beauty of face. This means that one must have not only a beautiful face, but beautiful hands as well; not only a good complevion for the face, but a god complexion all over. The writer was very much shocked, in examining a young lady with a beautiful face, to find that her back was covered with pimples. When told what they signified, she said, lightly, "If it was on my face I should feel awfully bad about it, but as long as it is out of sight I don't mind it." But pimples on the back mean the same thing as pimples on the face—uncleanness inside; the whole body is in a state of uncleanness, and of low resistence because of this inner uncleanness. The only way to be really beautiful is to live beautifully, to live rightly. If one is going to be beautiful, for example, one must eat beautiful things, because our bodies are made of what we eat. No one admires brown circles around the eyes and brown patches on the hands, and a leather-colored skin. One knows what these things mean. Behind the leather-colored skin is a bad breath. Behind that bad breath is impure blood—blood charged with these sace offensive aromas that are coming out of the blood; for that is where these offensive odors come from; the blood picks them up in the colon and other parts of the body and carries them to the lungs where they are poured into the breath. The breath is bad because the whole body is bad.—Dr. Kellogg.

Alcohol.—A diminution in the con-

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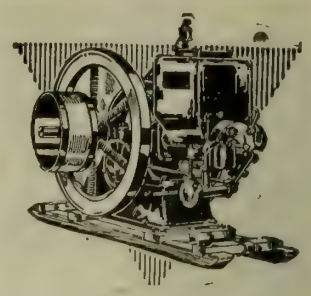

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If you are discouraged with your condition, weak, tired, subject to headaches, backache-bearing down sensations, weakness of bladder, constipation, hot flushes, melancholy, tendency to cry over trifles, nervousness and loss of interest in things generally, I want to help you to better things.

My own was probably as deplorable a case as could be found, yet it quickly yielded to "Orange Lily" treatment and to-day I am a well woman.

"Orange Lily" is a simple, natural, common-sense remedy that you apply yourself. To go to drinking harmful drugs for troubles such as ours, is like trying to cure a sprain with pills. The only right and effective treatment is a strictly local application, like "Orange Lily."

Because I am sure in advance of the wonderful results you will have, I want to send you ten days' treatment, FREE. Will you write me to-day, NOW, and let me help you. Address: Mrs. Frances E. Currah, Windsor, Ont. 13

FREE

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BOYS AND GIRLS—This is the chance of your life to get the finest scholar's outfit that was ever offered. **Just read what it contains:** One high-grade largest size English school bag, one fine Royal fountain pen with three extra gold finished nibs, one all-steel, silver finished pen knife, one combination safety pen and pencil, a big complete printing outfit with six rows of type, one dozen (12) high-grade lead pencils, a fine pencil box with lock and key, a microscope or magnifying glass, one box of fine crayons, one box of fine paints containing 26 colors, one horseshoe magnet, one school compass, one 12-inch ruler, and last but not least, a fine eraser. **It is a wonderful outfit for you.**

Send us your name and address to-day, and we will send you, postage paid, a free sample package of **"Fairy Berries,"** the delightful, new Cream Candy Coated Breath Perfume, and just **32** large 10c. packages to introduce among your friends. Open your free package and ask all your friends to try a "Fairy Berry." They'll like them so much that everyone will want a package or two at once. Just one little "Fairy Berry" will purify the mouth, sweeten and perfume the breath, and they are irresistably delicious. Everybody just loves them. You'll sell them all in an hour. "Fairy Berries" sell like wildfire.

Then return our **$3.20** and we will at once send you this grand complete 28-piece scholars' outfit, exactly as represented; and a beautiful full size English Film Camera (value $1.50) will also be sent to you for showing your grand Scholars' Outfit to your friends and getting only four of them to sell our goods and earn our fine premiums, as you did. We arrange to stand payment of all transportation charges on your outfit. Write to-day—right now while you think of it. Address

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Gilson Engine

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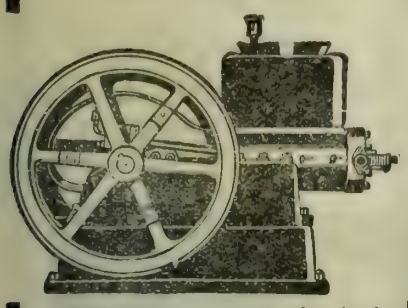

ANYBODY can operate the simple "GOES LIKE SIXTY" Engine. Ready for work the moment you get it. Built strong and solid to last a lifetime. Will give long, unfailing satisfaction. Gas, gasoline or kerosene can be used for fuel.

GILSON QUALITY gives full value for your money—dependable service, great durability, highest economy and perfect satisfaction; freedom from trouble, delays and expense

EVERY ENGINE ABSOLUTELY GUARANTEED. You can try this engine on your own farm before settling for it. You take no chances.

THE "GOES LIKE SIXTY" Line has an engine for every purpose. All styles and sizes from 1 to 40 h. p.

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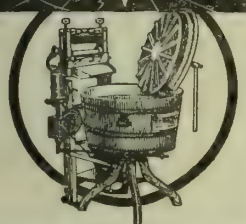

Combination Washer and Wringer
A Notable Production of an Electric Age

In the NEW IDEA ELECTRIC, the latest and most perfect labor saving devices for washing and wringing clothes are fully perfected.

The wringer swings to and works in either direction, in any position, over stationery or ordinary tubs, and the operator has nothing to do but feed the machine and hang out the clothes. Ask your dealer about it or write direct.

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If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

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sumption of alcohol by the community would mean less tuberculosis, less poverty, less dependency, less pressure on our hospitals, asylums and gaols. Intemperate drinking cuts into the support of the family. The drinking of parents weakens the vitality of children. Drinking mothers lose twice as many children as do sober mothers. More alcoholism is found in the parents of feeble-minded children than in the parents of normal children. The children of drinkers develop more slowly and do poorer school work than do the children of abstainers. Alcohol impairs the tone of the muscles and lessens the product of laborers; it depreciates the skill and endurance of artisans; it impairs memory, multiplies industrial accidents, causes chronic disease of the heart, liver, stomach and kidneys; increases the death rate from pneumonia, lessens natural immunity to infectious diseases.—Dr. Goldwater.

Effects of Indigestion.

Imperfect digestion lies at the foundation of a greater variety of diseases than any other one cause. The various vital processes, the sum of which makes up the life of every individual, depend most largely upon the digestive organs for their character and continuance. All the energy manifested in the vital processes is latent in the food we take. In order that the different organs of the body may appropriate this energy for the performance of their functions, the food taken must be properly digested. When the digestive organs do not perform their work naturally the whole system suffers from lack of nourishment. Nor is this all. When indigestion supervenes fermentation or decomposition of food always takes place. Food material thus affected becomes poisonous to the system, and this poison, absorbed into the circulation and carried to every part of the body, poisons and consequently weakens every organ and every cell.

An acute attack of indigestion temporarily weakens the system and may give opportunity for the contraction of many forms of disease, but when such a condition becomes chronic it greatly favors the inception of many serious forms of disease. There are doubtless many cases of tuberculosis which would never have been contracted had not the system been weakened by chronic indigestion. Many disorders of the liver, kidneys and intestines, and a great variety of nervous affections, can easily be traced to the poisoning of the system resulting from imperfect digestion.

Custards in Variety.

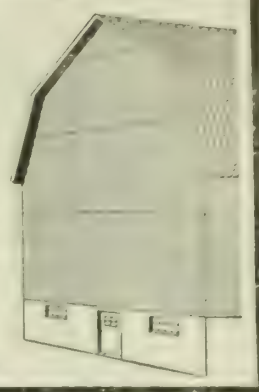
Of desserts, custards were favorites with our foremothers because eggs and milk were readily obtainable. The usual proportion was four eggs to a quart of milk although when plentiful six were often used. A simple soft custard is made by beating the eggs with the sugar—one-half a cupful to the quart—adding the milk, pouring into a double boiler and stirring until the mixture begins to thicken. If the heat is strong it is then well to lift out the upper vessel for a moment and to repeat every few minutes as it lessens the danger of cardling. When the custard is thick enough to coat the spoon, strain and set it aside. As most flavorings are in the form of extracts—in which a certain amount of alcohol is used—it is best to wait until partly cooled to add the variety desired. For baking, strain the above raw mixture into cups or molds, stand in a pan of warm water and place in a moderate oven until a knife of spoon carefully inserted in the centre will come out clean. Renversee or caramel custard calls for a caramel coating. To make this put one-half a cupful of granulated sugar in a frying pan and stir over a moderate fire until melted and golden brown in color. Pour quickly into the dish or mold turning to coat the bottom and sides; when cool and hard pour in the strained mixture and bake.

"Metallic" Corrugated Iron Barns are Lightning, Fire, and Weather-Proof

Lumber and labor are too expensive to be used in farm buildings; besides, wood buildings are easily destroyed by fire and lightning. "Metallic" Corrugated Iron makes buildings that last a life-time; that are warm and dry; and proof against fire, lightning and weather.

Costs Less Than Lumber

You save money on labor and lumber when you use "Metallic" Corrugated Iron. Write for complete information before you buy any building material. We can save you money. Our corrugated iron is made in galvanized or painted sheets, straight or curved. 7



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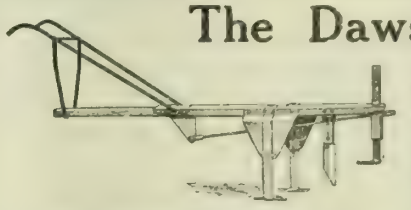
The Dawson Ditch Digger



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Will dig 5 feet or more in depth, cutting the ditch 10 inches wide, allowing the [illegible] as large as 8 inches if needed. The average cost of ditching with the **Dawson Digger** per 100 feet, which is approximately has averaged up to $1 50 per 100 feet, that is, to dig the drain, lay the tile, and to fill the drain back in again. We do not say that it will cost every farmer $1 50 per 100 feet, or 6 rods, as it has been our experience that lots of drains with the **Dawson Digger,** have been put in under 70 cents per 100 feet. We know, however, that the **Dawson Ditcher,** if handled according to instructions, will pay for itself in 2,000 feet of ditching, whether you figure it against hand or machine ditching.

Write for full particulars, and testimonials from farmers who have used the Dawson Digger.

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A. B. SHUBERT, Inc. 25-27 WEST AUSTIN AVE. Dept. C 200 CHICAGO, U.S.A.

Mutton Hams.

B. J.—Mutton hams are a choice delicacy when well cured. They should be well rubbed with a mixture of equal parts of salt and brown sugar, and left to drain for twenty-four hours. The pickle from the bacon and hams is then reinforced with some brown sugar, and boiled and skimmed, and when cold is poured over the mutton in the salting tray; or a pickle made especially for them can be used, viz.: 2 lb. each of comomn and bay salt, 6oz. of saltpetre, 1oz. of sal prunella, and 1 lb. of brown sugar boiled in 4 quarts of water for two hours, the brine being frequently skimmed. The pickle when cold is poured over the hams, previously salted, drained and wiped, and the meat placed in the pickle for about two weeks, when it is dried and smoked. A few bunches of sweet herbs laid in the pickle add a desirable flavor to the meat. It is necessary to dry the hams gradually, and smoke them only a little each day, and the smoke should be cold. This rule applies to bacon and pork hams as well.

Yeast.

M. G.—A yeast which should suit you admirably is made as follows: Take 1 gallon of water, 6oz. hops, and 2 lb. sugar. Put the hops and sugar in the water, place over the fire for five or ten minutes until it comes to a boil. Strain through a cloth into a baking dish, wringing the water well out of the hops. Let the liquor cool to about 70° Fehr. Then stir in 6oz. of flour which has been reduced to a thin batter in cold water, care being taken that all lumps are well beaten out. Then bottle, filling to about ¼in. above the shoulder. Cork tightly, tie down with strong cord, and set the bottles in a temperature of 70° Fehr. In a short time the yeast will begin to work, and will continue to do so for three or four days. All the organic matter will then settle to the bottom and the liquor become clear. The yeast is now ready for use. If intended for future use, set past in a cool place. When required put the bottle by the fire until fermentation again sets in.

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YOU owe it to yourself to obtain the Highest Market Prices for your Raw Furs. Write for our authentic Price List—TODAY—Sure. Make a Trial Shipment.

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Strictly an American House

FURS

You Got 'T Salute.

(Continued from Page 131)

th' fince. Here's lookin' at th' Rid, White an' Blue, Grossmeyer. Good luck t' ye!"

"Seventeen! Eighteen!" counted Kilmer, and loaded the revolver again. "Nineteen! Twenty! Twenty-one!"

Grossmeyer twisted one of his mustache ends sheepishly for a moment.

"Ven I get so mad," he said to Corrigan, "mit cabbages plants joomped on und scoost planted already, I say me witout thinking whatever comes my head into. I don't mean it by my heart ven I say 'dirty Irish' by your Patsy. I mean noddings at all by it, Mr. Corigan. He vas a clean boy."

"Lave be, Grosmeyer!" said Corrigan good naturedly. "I've a hot temper iv me own. Th' worrds riled me, ye see. But at that," he added, "tw'u'd do Patsy no harm t' wash his face wance in awhile, Mr. Grossmeyer. We that are Americans sh'u'd sit an ixample t' th' Wops an' th' Dagoes an' furriners in gen'ral!"

Apple Syrup.

(Continued from Page 119)

tated chalk, is a low-priced chemical available at any drug store. Boil in kettle or vat vigorously for a period of 5 minutes. Pour the liquid into vessels, preferably glass jars, or pitchers; allow to stand 6 to 8 hours, or until perfectly clear. Pour the clear liquid into preserving kettle. Do not allow sediment at bottom to enter. Add to the clear liquid one level teaspoonful of lime carbonate and stir thoroughly. The process is completed by boiling down rapidly to a clear liquid. Use a density gauge or candy thermometer and bring it up to 220° F., or, without, thermometer, reduce bulk to one-seventh of original volume. To see whether it is cooked sufficiently, test as you would syrup or candy, by pouring a little of it into cold water. If boiled enough, it should have the consistency of maple syrup. It should not be cooked until it hardens like candy when tested. When the test shows that the syrup has been cooked enough, pour it into fruit jars, pitchers, etc., and allow it to cool slowly. Slow cooling is important, as otherwise the suspended matter will not settle properly and the syrup will be cloudy.

A good way to insure slow cooling is to stand the vessels full of syrup in a bucket or wash boiler of hot water. They may also be placed in a fireless cooker. The white sediment which settles out during cooling is called "malate of lime" and is a compound of lime with the natural acid of the apple. When the syrup is cooled, it should be stored in fruit jars or bottles. Place the rubber cap or cork in position and tighten. Then place the bottles or cans of syrup in hot water and sterilize for 12 minutes in hot-water or home-made outfit.

GIRLS—This beautiful stylish muff will keep you lovely and warm this winter and it is so handsome and dressy that you will be the envy of all your friends. It is the very newest pillow shape—and extra large in size, measuring more than 16 inches wide by 10 inches deep. It is lined throughout with fine quality black satin with the new ruffle edge and finished with a silk wrist cord. This lovely muff is warm and dressy, will give you years of wear and satisfaction and is surely just what you most want.

We are prepared to give away, **absolutely free** 1,000 of these handsome muffs to quickly introduce our delightful new Royal Japanese Perfume. Simply send your name and address today and we will send you 35 handsome bottles in 6 different delicious odors—Lily of the Valley, Carnation, Wood Violet, White Rose, etc. Help us advertise this delightful perfume by selling these among your friends at our special introduction price of only 10c each. It is very easy as many ladies buy 5 and 6 bottles of this fine perfume on sight. Return our **$3.50** when the perfume is sold and we promptly forward the muff just as represented, all charges paid right to your door. We guarantee satisfaction. Write today to

THE REGAL MANUFACTURING CO. 5
Dept. M. 17 Toronto, Canada

An Appreciation of the M. S. B. A. and the Maritime Winter Fair.

(Continued from Page 115)

or else you have attained that state of perfection where it will be impossible to make further improvements on yourself or your methods. If you are in the latter class, it is your duty to come to the Fair and let your light shine.

With such men as Col. H. Montgomery-Campbell as president and F. L. Fuller as secretary-manager, and their able corps of assistants in the respective departments of the work, no fear need be felt for the continued progress, welfare and educational value of The Maritime Winter Fair.

The prize list has been augmented to the extent of $1,000 this year and $3,000 has been spent since the last Winter Fair in alterations and repairs.

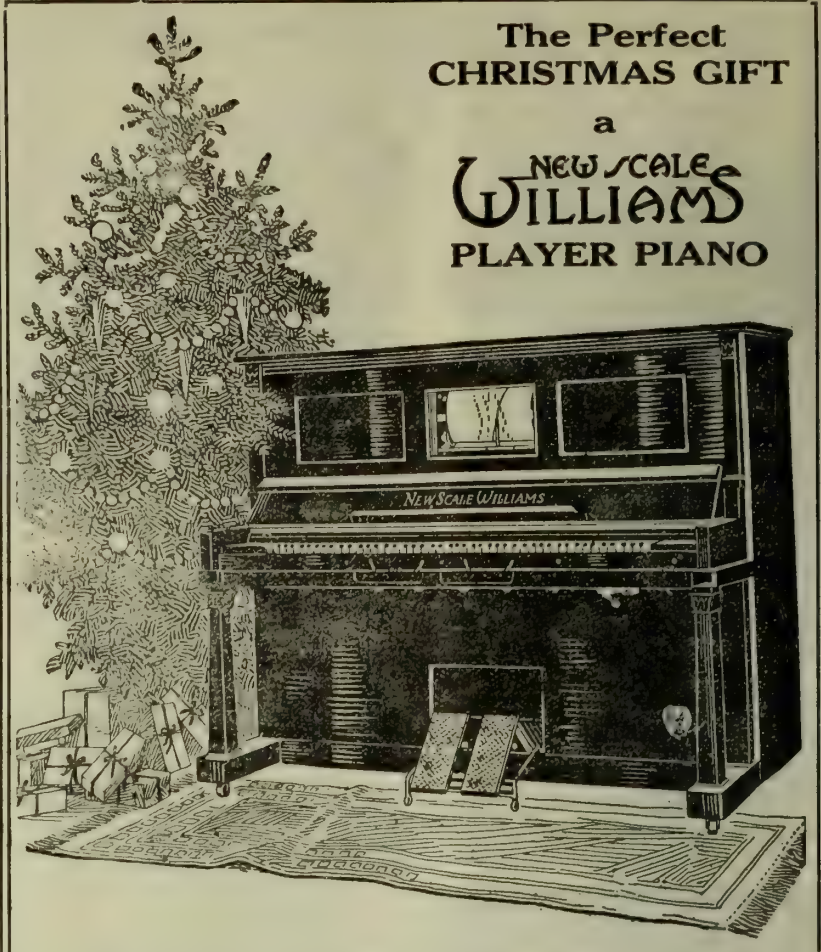
The fair will be held this year on December 6, 7, 8 and 9. The president says, "Come"; Mr. Fuller says, "Come"; and the Stock Breeders say, "Come." Come with us and we will do you good.

Boiled and Baked Custard.

W. A. T.—The following is a good recipe for a plain, boiled custard: Boiling milk, 1 qt.; sugar, 2 oz.; thin yellow peel of half a lemon. These are mixed and set aside for a short time. Beat up four eggs in a basin and gradually add the milk (not too hot) to the beaten eggs. Pass the mixture through a colander or sieve and fill the custard cups with the strained mixture. The cups are placed over the fire in a stewpan containing about an inch of hot water, and are left there for 12 minutes, or till sufficiently set. Baked custards are made from 1 qt. of cream with four eggs, flavored with mace, nutmeg and cinnamon. A little white wine, rose-water, and the sugar are added and the custards baked in cups.

Fish bones in the Throat.—Prevention is the first aim, and should be fairly easy. It is well not to feed children, at any rate, with fish of the particularly bony order. And generally the accident would seem the consequence of undue haste or negligence. It scarcely ever occurs in adults who eat slowly and take pains properly to masticate their food. Should a bone really lodge in the throat, you may try to dislodge it by gulping down large mouthfuls of bread and milk or rice pudding. Failing this, see the doctor. It is important to remember that the sensation often persists—especially in nervous people—long after the cause has been removed. Repeated gargling with warm vinegar and water may be resorted to by an adult.

The Perfect CHRISTMAS GIFT a NEW SCALE WILLIAMS PLAYER PIANO



Give your family a Christmas present that will
—please mother and brighten the home,
—please the children and teach them the value of good music,
—please father and take his mind off the daily cares of his workaday life
With a New Scale Williams Player Piano, you, yourself, and your children can play the most difficult compositions of the world's greatest musicians, without a tiresome course of lessons, through the Mæster Touch device, which is found in no other piano.

If you write AT ONCE we will guarantee to have a piano or player piano in your home in time for Christmas.

Write today for handsome catalogue of different models and let us explain our easy payment plan.

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THE WILLIAMS PIANO CO., LIMITED
OSHAWA - - - ONTARIO.

A Very Serious Disease of Dairy Cows

Combating Contagious Abortion.

My eight years' experience proves that an abortive cow does not transfer the disease to other cows except through the bull.

Soon after I began farming I began a study of contagious abortion and in every case I traced I found that the bull became infected from the cow and passed it along to other cows.

The course of treatment described I have tested as I went along and have rid a number of cows of this disease. Early last spring I used an infected bull that I borrowed from a neighbor and supposed was clean. He infected four of my cows and I used this treatment to cure all of them.

My method is disinfection with carbolic acid solution. I had a tinsmith make a gallon can shaped like a kerosene can, but without a bottom. The funnel-shaped end fits a small hose. On the large end of the can I put a bail so as to hang on a hook above the cow. I fill this with disinfecting solution and thoroughly wash the infected parts. Tie a red string tightly around the hose nine inches from the end as a mark so as not to push the hose far enough in to hurt the cow's ovaries. This apparatus costs 60 to 70 cents.

Simple Test for Strength of Acid

I use carbolic acid crystals. I dissolve them and pour enough into a quart of clean lukewarm water to give it a tang, but not make the tongue smart. I am careful to have everything clean, and I always taste the mixture so as not to burn the cow.

Dip the end of the hose into liquid before inserting into the vagina. It kills possible dust germs on the hose and makes it enter easier. Push it in carefully to the red string, and as soon as she stops fussing hang the can on a hook above the cow. Release the liquid through the hose, continuing until the cow discharges the liquid. This should be done 24 hours after freshening and continued every day for a week, and every three days thereafter until she comes in heat, then about every five days. Within 24 hours after service she should be treated again.

For the bull, use a large-necked bottle, six or eight inches long filled with the same liquid. When he has his penis out, draw the bottle up over it and when he draws his penis into the sheath, it will cleanse the sheath. If you are careful and don't get the liquid too hot, the bull takes to it kindly. This also should be done just before the bull serves.—C. G. Penny, Sagadohoc Co., Me.

[Editor's Note: The principles of Mr. Penny's experience are indorsed by authorities, and we are glad to print his excellent results. We do not indorse his method of testing the strength of the disinfectant. There is too much variation in people's sense of taste. Furthermore, there is a chance for somebody to burn his tongue severely or dangerously in testing carbolic acid.

Carbolic acid is an excellent disinfectant. Any standard disinfectant will do as well, however. Creolin, for instance, is a much more powerful agent. Corrosive sublimate or bichloride of mercury in proper solutions are also recommended.

Other Cleansing Mixtures

No matter what disinfectant is used, remember that the solution is to come in direct contact with the mucous membrane and it must be weak enough to avoid injuring the membrane and still strong enough to do the work. A 1% solution of carbolic acid answers the purpose. This means that you use one part, by weight, acid crystals in 100 parts by weight water. Get your druggist to weigh the crystals out and tell you how many quarts of water to use for each dose. If you use bichloride of mercury dissolve 15 grains bichloride and 1¼ ounces copper sulphate in two gallons water. Use good clean water, preferably boiled first. figure out how much of the solution you are going to use and have the doses marked.

The germs of contagious abortion undoubtedly are commonly carried by the method described by Mr. Penny. They also enter the system through the mouth in infected water or feed, pass into the circulation and eventually cause the disease. General cleanliness and disinfection of the oarns and isolation of diseased animals are recommended in addition to the sanitary measures described above.

At Montana station Taylor found that carbolic acid either fed in solution or injected hypodermically acts as a preventive of contagious abortion. Cows will eat as much as 750 cubic centimeters daily of a 4% solution of carbolic acid. A hypodermic injection involves less labor than feeding it. It left no bad after effects, while the cows so treated carried their calves to the full time and bore healthy young, although previously infected. Internal carbolic acid treatment should, of course be attempted only under expert supervision.

Dehorning.

How would you suggest dehorning a heifer 15 or 16 months old? The horns are about 3½ inches long. Do they have saws specially for that purpose? If the saw is used, how close to the head should the horns be cut off? Would be make any material difference if she was with calf.—A. B. T.

Both the saw and clippers are used in the removal of horns. The former is the slower process and the pain is probably more severe because of the length of time required, but since the blood vessels are not smoothly severed less loss of blood is liable to follow its use. The head of the animal should be securely fastened in a rigid stanchion with the head held up by ropes so that the animal cannot thrash around. The saw commonly used in the jointing saw or a small meat saw. The clippers do the work with greater dispatch and are possibly more easily operated. Instructions as to their use may be secured from the manufacturers.

Whatever instrument is used, the cut must be uniformly made just under where the skin joins the horn or just below the tissue from which the sheil of the horn develops. The cut must not be too high or too profuse bleeding will result, besides a gnarly growth of horn is apt to appear. Cold water is the only dressing needed, although some prefer to apply a coating of tar. The animals may be dehorned at any time except in fly time or in zero weather. If the operation is done when flies are numerous they are liable to lay their eggs in the bloody wound and the cavities become filled with maggots, causing great agony to the animal. In extremely cold weather the animal may suffer from colds and catarrh as a result of the operation. It is much safer not to dehorn a cow a few months before calving, and it should be delayed until she has returned to normal after calving—Hoards.

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In the winter unless feed containing this matter is supplied, milk is likely to be off in color, but it may be as high or higher in fat content. In fact, the average cow gives a higher percentage in winter than in spring and summer.

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I. C. R. Business Back to Normal.

Government Railway Has Recovered Drop of Twenty Per Cent.

IMPROVEMENTS ARE MANY

Transcontinental Section is Also Busy and Promises to Produce Very Large Traffic

(Montreal Gazette, Nov. 6)

Mr. F. P. Gutellius, general manager of the Dominion Government Railway System, who is at the Windsor, stated yesterday that from a 20 per cent drop, the business of the I. R. C. had come back to normal, indicating a general revival in business all over the Maritime Provinces. The pasenger business is so good that the two daily trains between Montreal and Halifax will probably be kept on till after the holidays, whereas last year the Ocean Limited was taken off in November. Although little double track has been laid this year, ten thousand tons of steel have been laid on the main line, and Mr. Gutelius says that 20 per cent. of the main line is now laid with eighty-five pound rails and the remainder with 80-pound, the former being what is known as the C. P. R. standard, and the latter only differing from the maximum in the wearing capacity. As for the bridges between Montreal and Halifax, they are now all capable of carrying the heaviest locomotives in existence, and the roadbed all through is better than at any previous time in the history of the Government Railway. All this new steel has been put down out of earnings, and capital account has not been increased by any improvements. Much work has also been carried on during the past season between Truro and Sydney, the most important being a renewal of the bridge over the Grand Narrows, a short distance beyond the [illegible] Canso, Mr. Gutelius said that passengers going to Cape [illegible] member that when the weather was rough, the water would dash up against the bridge. To obviate this the new superstructure has been raised some six feet, making a very imposing and greatly improved structure.

The general manager says the I. C. R. is a different road from only a few years ago. At least half of the stations and other buildings have been painted this year, and the others will be finished next year. The number of trains running on time during the past season exceeds in percentage any other road on the continent. Heavy business is expected at the ports of Halifax and St. John during the coming winter. Mr. Gutelius expects that the mail trains will make a record this winter, as the ballasting has been improved, and the roadbed is everything that can be desired. The two biggest jobs on the Government Railway System are the ocean terminals at Halifax and the ferry system between the New Brunswick side and Prince Edward Island. The new station at Levis will also be carried to completion, and will be one of the finest stations of the whole line.

As the Government system now embraces the Transcontinental, Mr. Gutelius said that from the time it had taken over the road, or from the eighth of September on, no less than three hundred carloads of grain had moved over the road daily from Winnipeg to Fort William. The daily fast freight between Cochrane and Winnipeg is also well patronized and justifies the expectations of the department, as do the tri-weekly trains on other sections of the systems.

Mr. Gutelius says that a busy spot in the new north country is Amos, located about on the boundary between Quebec and Ontario. This community is receiving three or four carloads of settlers and their effects by each train, and with stores and shops of different kinds, there is a hustling

The Great British Remedy.

COUGHS THAT HURT

That kind of cough must be stopped, and at once; it is dangerous. The severe strain it causes may have serious consequences. You can stop it—and cure it—with the World-famous British Remedy, Veno's Lightning Cough Cure. There is nothing in medicine more quick or more sure than Veno's. That is why it is called a "Lightning" cough cure.

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Veno's Lightning Cough Cure is the most popular cough remedy in the whole world. Why? Because its a real cure, quick, sure, thorough; because it is free from every kind of poisonous or dangerous drug; because it is as good for children as for adults; because a better preparation could not be made, if the price were dollars instead of cents. Trust Veno's in the treatment of—

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Price **30** *cents.*

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Your Child May Have Worms

Keep a watchful eye on your child's health. Above all guard against worms. Familiar symptoms of worms in children are: Deranged stomach, furred tongue, belching, variable appetite, increased thirst, acid or heavy breath, nausea, enlarged abdomen, costiveness, pale face of leaden tint, bluish rings around eyes, itching of nostrils, languor, irritability disturbed sleep, grinding of teeth, irregularity of pulse.

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Grown folks are subject to worms also.

The one best remedy is Dr. True's Elixir, the Family Laxative and Worm Expeller. First sold in 1851—today it has a world-wide reputation. Good for adults also. Get a bottle today—at your dealer's; 35c. 50c and $1.00. Advice free. Special treatment for tapeworms. Send for book.

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He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

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PETITCODIAC, - N. B.

population of over two thousand. Cochrane, he says, is also progressive, and Mr. Gutelius is convinced that the northern country served by the Transcontinental will be productive of considerable traffic in a few years, as business develops rapidly along a good railway system and no criticism can be made of the line in question. He saw the best quality of oats growing in the vicinity of Cochrane, and he is certain that the country adjacent will grow very rapidly.

Shelter the Implements.

Enormous sums are spent annually by the farmers of Canada for implements which, due to neglect, last on the average only half as long as they would if given proper care. To equip an average farm with machinery costs about $1,000. Implements subjected to the deteriotating effects of the weather will not do good work for more than five years. Thus there is necessary an expenditure of something like $2000 for each period of ten years. On the other hand, by protecting with suitable shelter, implements may be kept in use for more than twice the five-year average.

A comparatively cheap shelter will serve to protect the machines; one sufficiently roomy can be built for approximately $400, which should be considered as money invested, for it will realize a good dividend.

The following plan of a comparatively cheap shelter will meet the needs of the average farmer. It is capable of many modifications, and a careful study of the plan will be helpful to those who intend to build. Of course, the building can be made any length desired.

Plan...The building is 25 by 57 feet outside measurements. Concrete piers 12 inches square, spaced at frequent intervals, spport a six-by-six inch sill composed of two three-by-six pieces bolted to the piers. On this sill are placed two-by-six inch studs, which support a four-by-six inch plate composed of two two-by-six inch pieces. These studs are covered with one inch T and G boarding. The rafters are two-by-eight inches at 24 inch centres and are covered with one-inch sheeting and good cedar shingles, laid four and a half inches to the weather. The roof is strengthened by a truss spaced about ten feet apart. This truss consists of two two-by-ten pieces, starting from each side of a rafter and bolted together at the centre with a two-inch piece between them. Stock windows opening three feet by five feet are used. The sliding doors, which are built of V joint boarding with battens on the back, are equipped with hangers and track. The centre door slides on the inside and the others on the outside.—W. L. Graham, Field Husbandry Division.

Restoring Old Furniture.

M. R. T.—You must first remove all traces of the varnish and dirt by washing down the goods with strong soda water. Then follow with a thorough washing of clean water to remove the soda. Now bleach the work with a solution of oxalic acid, made by dissolving the acid in hot water. When this has been done, apply a thin coat of good copal or spirit varnish; allow it to dry, and apply a second coat of varnish. Be very careful how you handle the oxalic acid, and see that it is placed beyond the reach of children or animals, as it is a deadly poison. If all the acid is not used, the remainder should either be destroyed or labelled distinctly, as the powder has often been mistaken for Epsom salts, with disastrous results.

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Methods of Breaking.

It is evident that farmers are no exception to those who follow other professions in that the most valuable and definite knowledge they are wont to obtain is in the hard school of experience. So much of success depends on doing the right thing in the right place and at the right time in agriculture that every farmer can profit by observing the results of different methods. I learned a valuable lesson in the past two seasons in regard to the effect on the crop yield of different methods of breaking sod.

Two fields of similar land with a rod between the plots were broken the same week in June. The first was plowed three inches deep and left untouched until the next May when it was disced six times, well harrowed and sown with wheat. No rain fell of any consequence after sowing and the yield was ten bushels per acre of low grade grain, just 200 bushels from twenty acres. The other field of ten acres was plowed deeper, about four and one half inches, and was disced six times and harrowed four times within a week of breaking. It was then packed and left till May the next year, when it was harrowed and sown. Both fields had the same appearance after seeding. In the scorching weather during July the second field showed no signs of drought and on threshing yielded 230 bushels of No. 1 wheat, more than double what the other yielded per acre. Seed, soil, precipitation and workmanship were in both cases identical and the first crop failed not from a lack of plant food, but from lack of sufficient moisture to enable the plant to use that food. This was due to wrong methods of cultivation. I think more is lost each year by wrong methods and misapplied energy than through poor seed or weed pests. Since the results of poor breaking methods are seen for the next three years it is evident that ten acres done right is a better investment than double the acreage simply "broken."—T. W. W. in Grain Growers' Guide.

That Old Horse.

Yes, he has pulled the heavy loads in winter and cultivated the crop in summer. The family have driven him to the church every Sunday morning. The children have piled on his back and ridden around the fields and enjoyed it very much. He has been faithful to you and your family. To the best of his ability he has made himself valuable to you. The money he has made can not be told, for you have never kept an account of the worth of the horse; but for twenty years he has been worth from fifty cents to a dollar a day. Of course, he has more than paid you for his feed and shelter.

Well, what are you expecting to do with the old horse now? He is stiff in the joints and blind in one eye. He can not pull a load, and the children are grown and gone, so they cannot ride him about any more. Did you say you were going to trade him off or sell him to a peddlar? That would mean a hard time for the faithful animal. Surely you would not part with the horse that has helped you to pay for your farm, keep the family and rear the children. He has earned his right to a peaceable, quiet old age, with good feeds of grain and hay and the same warm stall. He has not failed you when he was strong, and you should not fail him when he is old and useless. Let him come in and lie down to rest on the same good bed of straw. And when he comes at last to the end of the journey, bury him beneath the friendly soil he has so often tilled for you.—W. D. Neale in Farm Journal.

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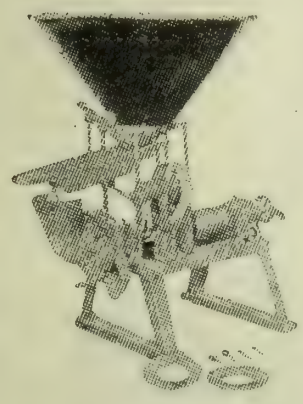
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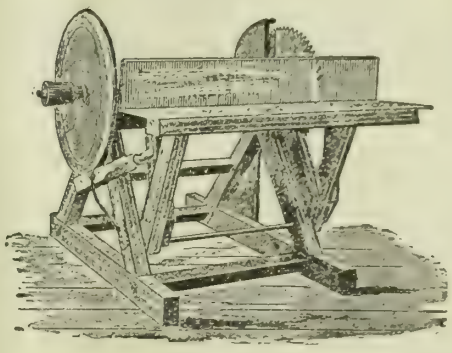
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THE NEW 1.00 SIZE CONTAINS 3 TIMES AS MUCH AS THE TRIAL SIZE SOLD AT 50c PER BOTTLE.

Bees.

Wintering in the Cellar.—In wintering bees in the cellar the aim should be to give them as much fresh air as possible without letting the temperature of the cellar drop below about 40° F. nor rise much above 45° F. Where fresh air is deficient the temperature should be kept down to about 40° F., but bees do better with an abundance of air in a temperature of about 45° F.—a combination hard to get in most cellars. The cellar must be dark and the air sweet, and neither very dry nor saturated with moisture; draughts should be avoided. Dead bees, if numerous, should be swept out in January, and again early in March. The bee-cellar should be partitioned off form the portion of the cellar containing roots; mice should be excluded, and the bees should be left undisturbed. If the bee-cellar is in the basement of a dwelling house the bees soon get accustomed to the tramping on the floor above.

Bring the bees into the cellar on a cool day in November as soon as reasonable expectation of another good cleansing flight has ceased and before zero weather sets in. To bring in the bees the entrance may be closed with soft paper, which should be removed as soon as the bees are settled in the cellar; the covers should be removed from the hives, and their places taken by bran sacks, two or three being folded double on each hive. To prevent dead bees accumulating and blocking the entrance, a space of one and a half inches to two inches should be left under the combs, with the entrance the width of the hive, and one or two inches should be left under the combs, with the entrance the width of the hive, and one or two inches deep, and the hives may be tilted behind.

Wintering Outside.—In many places where the winter is moderately cold bees are now being wintered outside in wintering cases constructed to hold four hives each, each pair of hives being placed back to back. There is a space of two or three inches between the sides of the case and the hives, and in the colder regions underneath also, and ten inches above the hives; all these spaces being filled with planer shavings or other insulating material. The bees are allowed to fly through small entrances made in the sides, and ventilation is provided under the roof which consists of light boards covered with waterproof sheeting. The bees will come to no harm if the entrances get buried under soft snow. For wintering outside, it is important that the apiary be well sheltered from wind by, for instance, evergreens or a high board fence.

Supplies.—The winter is the best time for the purchase and preparation of bee supplies. Frames should be made up and wired ready to receive the foundation. The beginner will make no mistake if he adopts the ten-frame Langstroth hive as standard, and prepares a good supply of extracting supers to take Langstroth frames. A telescoping hive-cover packed with excelsior or shavings and covered wtih waterproof sheeting is better than a plain cover made of a single thickness of board, as it helps to conserve the heat in spring and to protect the bees from hot sunshine in summer.

Empty Combs.—Next to the bees, the most valuable asset of the extracted-honey producer is a plentiful supply of good, clean, empty combs. Empty combs should be stored for the winter in the supers, which should be tiered up with newspapers between each, and a cover on top to exclude mice. To prevent the wax moth from working in the combs they should be kept in a cold place.—F. W. L. Sladen, Apiarist, Ottawa.

Ventilation in the Root Cellar.

Lack of proper ventilation in the root-cellar is responsible for the loss of considerable quantities of stored potatoes, carrots, roots and vegetables. A safe root-cellar is frost proof, and is provided with good ventilation to keep the roots or potatoes from rot or decay. Care should be taken not to place in storage bruised or damaged roots or potatoes, as such are likely to cause storage rots. Keep the root-cellar as cool as possible, but free from frost; the most satisfactory temperature is about 35° F. to 40° F.—H. T. Gussow, Dominion oBtanist.

Apply Hen Manure as Made.

My henhouse floor is littered 10 inches deep with leaves in which the hens are obliged to scratch for their feed, which is corn, wheat and oats. This breaks up the leaves quite fine and with the pulverized litter the dropping board is covered four inches deep when the house is cleaned once a week. The manure is applied to the fall-plowed garden, where early vegetables will be grown next spring.

Mixed with the fine litter the droppings can be evenly spread and the winter rains soak the manure into the ground where it is available for the plants, giving them an early start. I followed this plan last winter and had ripe tomatoes two weeks before any of my neighbors. From four rows four rods long I sold $16 worth at 12 cents per pound.—E. P. Snyder.

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75 Acres Equipped, $2500.

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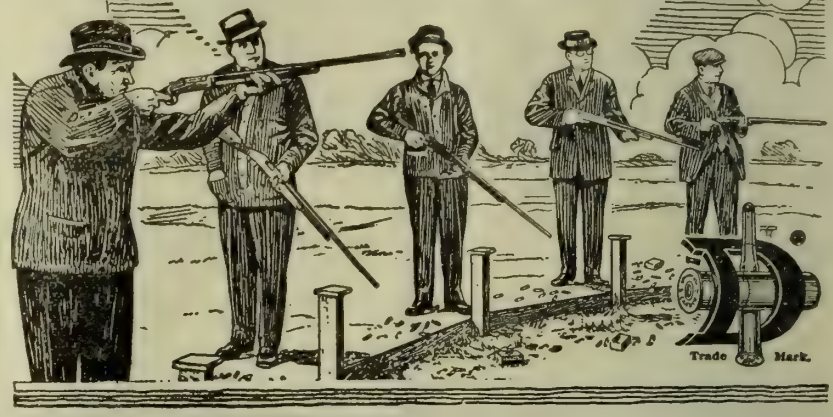

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Four turkey eggs, (Bronze) six Buttercups and five Single Comb Rhode Island Red eggs $2.00 Rhode Island R ds, Buttercups, $1.50 sitting 15 eggs. Best Buttercups eggs, birds good enough to exhibit, $2.00. Grey African Geese eggs 50c each. Blue Orpingtons from the bes English stock, I have one pullet in my flock from Crystle Palace, England, winner, and other birds from Boston and New York winners $5.00 for 15. Bronze turkey eggs $3.00 a dozen.

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Exhibition stock, $3.00 for 15; Utility stock, $2.00 for 15.

Some fine young Guernsey Bulls for sale.

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Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

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Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

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SHORTHORN CATTLE.

I have now for sale a few choice pure bred and Grade Bull Calves.

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SHORTHORN BULLS

A number of first-class Bulls from 12 to 20 mos. old, for sale.

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Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

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Shubenacadie, N. B. - Bloomfield Farm

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A few young Tamworths, male and female. The first Holstein Bull Calf at Fredericton. Several Ayrshires, Calves, Yearlings and Cows. Dorset Buck and Ewe Lambs.

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Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

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We offer 2 Bulls, pure bred, sired by the above, out of Record of Performance Mothers. One, dropped Sept. 10, 1914. The other Nov. 8; 1914. Write for particulars.

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Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

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Long Distance 'Phone.

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Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

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To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

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Springbrook Ayrshires !

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros., Sussex, N. B.

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What's the use of paying big prices for Eggs for hatching when you can get the BEST LAYING STRAIN of Barred Rock Eggs, for $1.00 per setting. Parks Rock have been bred for Egg production for over 25 years. A few Hens, Pullets and Cockerels for sale.

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Ayrshire Cattle Three bulls fit for service and a number of younger ones Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

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We have a number of choice Shropshire Ewes for sale at right prices. Also a lot of thrifty young Shorthorns, of the kind that can pick their own living off the land for at least six months of the year and keep on growing. Let us quote you our prices.

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Having bought a farm at this address and removed my Holstein herd from Rockview Farm, "Welsford", I am prepared to supply a few choice young Bulls. I have also a few choice Yorkshire pigs, both sexes, about four months old.

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Present offering. One fine bull fit for service and several bull calves three or four months old, sired by Helbon Dehols Prince, and from cows that are producers. Among them one whose two nearest dams average over 26 lbs. butter in 7 days. For particulars and prices write

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We have the type that gives best profit. Write your wants to

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Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

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The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

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Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

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Clydesdale Horses, Ayrshire Cattle, Yorkshire Hogs

For sale; One 5 year old Imp. Clydesdale mare in foal. Has had one colt. Weight 1500 pounds, Color, brown with white face. Clydesdale foal, female out of above mare sired by a horse weighing over a ton.

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We are offering at present two Ayshire bull calves sired by Springbank Rodger. His Dam qualified in the R. O. P. test as a four year old with 11,365.75 lbs of milk and 511.978 lbs. fat. These calves are good individuals and their dam is on test now We also offer a few young tested cows in calf to Rodger, due to freshen this winter and early spring Give us a call or write

J. HAWKINS, LANDOR Col. Co. N. S.

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Barred Rocks, White Wyandottes
White Leghorns

Cockerels, $1.00 each; Trios, (cockerel and 2 hens), $3.00; A few Leghorn Yearling Hens, 75c each; some late Leghorn and Rock Pullets, $1.25 per pair,

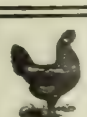
ORCHARD HILL FARM, Brown's Flats, - - N. B.

FOR SALE.

20 Rose and Single Comb R. I. Red Cockerels, 10 S. C. R. I. Red Hens, one year old.

Write for prices.

W. H. HENRY, - Shubenacadie, N. S.



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Here Eggs—$1.50. $2.50 and $5.00. Send for mating list. Have yearling cock for sale also two cockerels.

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J. Frank Roach, Sussex, N. B.

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Jos. R. Taylor, Upper Dorchester, N. B.
John B. Barton, Welsford, N. B.

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John H. Hughes, Petitcodiac, N. B.
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J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.
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Isaac Chipman & Son. Chipmans Corner, Kings Co., N. S.

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Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
E. W. Heurtley, P. O. Sutherland's River, N. S.
Steward Bros., Murray River, R. R. No. 1, P. E. I.
J.W.Callbeck & Sons, Box 386, Summerside, P.E.I.
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Hon. W. Owens, 4026 Dorchester St., Montreal.
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Wm. A, Churchill, Lakeside. Yarmouth Co., N.B
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Chester Whites.

Thos. W. Prowse, Union Road, P. E. I.
W. H. Moore, Scotch Lake N.B.
Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
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KENTVILLE, N. S.

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GOLDEN AND SILVER

Splendid exhibition Cockerels and Pullets—a large number—in both varieties for sale at right prices. Send for one or more of the kind that can win at The Maritime Winter Fair next month

EVANS KYLE
Magnolia Avenue Poultry Yards
SUSSEX, N. B.

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A Handsome Black Gelding, fearless and kind, with lots of speed, (trotter), a good show horse and a nice roadster, safe for a lady. Apply to

MRS. A. M. WILSON, Erskine, Dartmouth, N.S.

FOR SALE

20 S. C. R. I. Red Cockerels at $2.00 each. 20 S. C. R. I. Red Pullets at $2.00 each. Also a few R. C. R. I. Red Cocks, Hens, Cockerels and Pullets.

W. H. Henry, - Shubenacadie, N. S.

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One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—Oxford Down Rams. All ages.—J. W. MacDONALD, Lovat, Pictou, N. S.

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FOR SALE.—Purebred Yorkshire Pigs Three Boars, six months old. Apply to AUBREY CAMERON, Lyons Brook P. O., Pictou Co., N. S.

FOR SALE.—Pure bred Jersey Heifers ages five weeks to three years. Two freshen first of January. Terms reasonable. G. B. CLARK, Tatamagouche, N. S.

FOR SALE.—Four Ayrshire bulls fit for service; males and females all ages. One Yorkshire boar, seven months, one, two years Also Clydesdale horses stallions and mares. JOHN A. HUGHES, Petitcodiac, N. B.

DRESSED PORK 100 to 250 lbs. each well fatted. Butter prints and tubs. Eggs 3 to 10 case lots, prompt returns. JOHN HOPKINS, Mfgrs. of pork products, St. John, N. B.

YOUNG PIGS FOR SALE.—Purebred Berkshires, registered; Purebred Yorkshires, but not registered. Also Berkshires and Yorkshires crossed.—R. O'LEARY, Richibucto, N. B.

WANTED—LADIES TO DO PLAIN and light sewing at home, whole or spare time, good pay; work sent any distance; charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY. Montreal.

REGISTERED JERSEYS FOR SALE.—Bull, eighteen months, from heavy milking dam, guaranteed sure; cow, six years, cow, two years; heifer, one month. Fresh cows a specialty. WALTER LANGILLE, Tatamagouche, N. S.

GUERNSEY BULLS FOR SALE.—One seventeen months; one eleven months. Also young calves, after our imported bull, out of Record of Performance cows.—D. G. MacKAY & Son, Scotsburn, N. S.

JOIN THE VETERINARY SCIENCE ASSOCIATION—The greatest organization for farmers and stockmen in the world. A membership means hundreds of dollars saved. Each member has the privilege of reduced prices in medicines and consultations, and advice on all veterinary matters free of charge. These privileges alone are worth many times the membership fee. Beside this each and every member receives a complete Course of Instructions in the Veterinary Business. The Course of Instructions, entitled "The Veterinary Science," is a large book containing nearly 700 pages, profusely illustrated, durably bound and it is equivalent to a thorough practical course in a veterinary college. The membership is for life and the regular price is $5.00. But for a short time only, in order to introduce these valuable memberships and secure agents, I will send the book and certificate of membership postpaid for $3.00. Send today and save $2.00 as this special offer may not appear again.—C. M. ROBINSON, General Agent, Riverside, Albert Co., N. B.

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First prize Registered Holstein Bull over two years old, $100

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1.25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

Percheron Stallion
GLENEUR
FOR SALE!

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

Wm. Jamieson, - - Sussex Corner, N. B.

PISGAH PLACE

I have volunteered for Overseas Service and am selling my entire stock of purebred

Ayrshires, Clydesdales and Yorkshires
Also all Farm Machinery

The sale will take place on

Nov. 30, 1915, at 1 o'clock, at the Stables.

Parties will be met at the station. Write for catalogue

H. F. Ambrose, - Stewiacke, N. S.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls. 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

THE MARITIME FARMER

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CO-OPERATIVE DAIRYMAN

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, DECEMBER 7, 1915. Number 5.

Grading Seed Grain a Profitable Stormy Day Job

December is here. The fruits of the field, garden and orchard have been garnered. Frost and snow have begun to continue the preparation of the soil for next season's crops, where the farmer's plow and other implements of cultivation left off. There is nothing very much that the farmer can do in his fields until the hot spring sun thaws, dries and warms the soil that will help to produce a bumper crop in 1916 except the conservation, hauling and distribution of manures and the application of Slag and Ground Lime, one or all of them.

Many of the Maritime Farmers readers, with the coming of the frosty weather, are busily engaged in preparing their supply of fuel in the woods so as to have it ready to haul as soon as the ground is sufficiently covered with snow for good sleighing. They have long since learned that they can work to better advantage while the woods are free of snow. It is easier and cleaner to handle the wood when it is dry. It may be cut with a minimum wastage for stumps and one can lay out his roads to better advantage before the snow arrives.

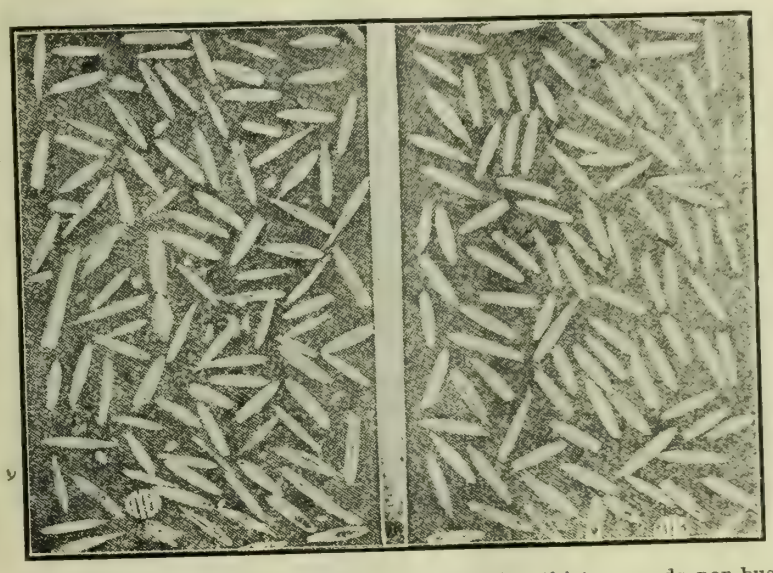
Others may be planning to do a little logging. In some sections the gathering of sea weed and the digging and hauling of alder muck and mussel mud for fertilizing purposes, is the order of the day. One or all of these operations will be performed in the various sections of the Maritime Provinces to fill in the time not required for chores and the care of the livestock. The fruit growers will be busy in their orchards cutting off a limb here and a branch there to facilitate the entrance of the suns rays to the most innermost recesses of each and every treetop as a sort of guarantee for red, rosy apples next fall.

Occasionally we have days when the weather is too disagreeable to work out of doors and not infrequently we hear farmers bemoaning the interruption to some line of work they had in hand. The careful farmer is seldom if ever chagrined by a wet day. He has always some job set aside to occupy his hours profitably on a stormy day.

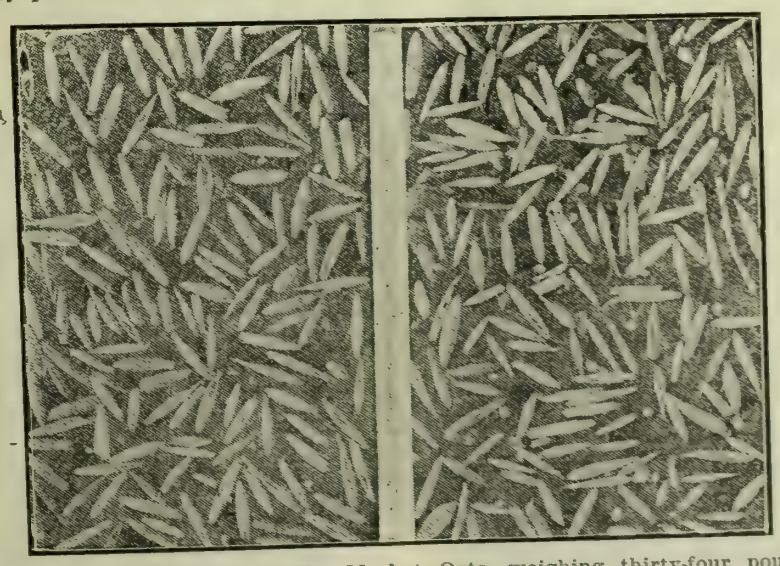
There is no more profitable operation that a farmer or his men can perform at this season of the year than by spending a day or days, if need be, in grading his grain to get the best and plumpest portions of it put aside for seeding purposes next spring. This is a class of work that may be performed to the very best advantage on stormy days. There is no work on the farm, done in rain or shine, that will give more remunerative returns than the proper grading of seed grain.

By all means it is a task that should not be delayed until you have fed out the best of your grain or until the grain in the bin is getting low. Do it while the fruits of your harvests are still intact. Use your fanning mill. Feed it slowly and run it fast and you will be rewarded with a nice sample of plump, heavy grain at the seed grain spout.

The cuts on this page have appeared in former issues of the Maritime Farmer. The story they tell is ever new and as this is the time of the year when the work they depict should be attended to we publish them again and trust they and the article that accompany them may be the means of starting some one who has never done so before to pay particular attention to the timely grading of his seed grain.



On the left, a sample of Original Oats, weighing thirty pounds per bushel. On the right, a sample of the Five and One-Half Pounds, weighing thirty-eight pounds per bushel, graded from the above fifty pounds of oats, weighing thirty pounds per bushel.



On the left, sample of the Market Oats, weighing thirty-four pounds per bushel. On the right, sample of Tail Oats, weighing twenty-seven pounds per bushel, that can be used for feed.

Some Reasons Why.

Crop yields are determined principally by weather conditions and the kind of seed planted. Of these three general factors, the last is most nearly under our control. Nevertheless, millions of dollars are lost directly every year through planting poor seed and the foundation is laid for endless trouble and loss by sowing impure seed and spreading broadcast on the fields the seeds of noxious weeds. Sow pedigreed seed if you can get it. At any rate, sow the best seed that you can get.

Test a fair sample, taken from various parts of the lot, for germination. Use the fanning mill with a good strong blast to blow out the impurities and light kernels. Repeat the process until you have removed all light seeds and weed seed and then rigidly grade what you have left. Sow only the plump, heavy well-developed kernels.

No law in nature holds so generally true as the old maxim that "like begets like," and while there are many factors dealing with the performances of individual plants that enter into the final results of seed selection, there is no doubt that rigid grading of grain much more than pays for the work involved. Thriftier plants are produced and naturally they yield better.

Crop authorities agree in advising the elimination of light and immature kernels from the grain seed. It must neverthless be admitted there is little positive data on the subject of increased yields from very heavy seed grain. Tests with wheat extending over several years show little or no direct advantage. At some stations increases in yield and quality have been noted. German investigators, however, 75 years ago, proved beyond question the undoubted profit of rigid seed grading. Plump heavy kernels have the vitality and stored-up plant food needed to give the young plant a vigorous start.

The livest and most successful body of seed growers in the United States is found in Wisconsin, where the graduates of the state agricultual school are banded together under the name of the state experiment association. Every man is a breeder and grower of pure seeds. Their products have swept the boards clean on small grains at all of the great national corn expositions. It is significant that these men, without exception, use the fanning mill vigorously and repeatedly, and then use the grain grader, taking out from 15 to 40% and sowing only the plump heavy kernels. They are a unit in approval of grading.

Some organizations in Canada are working along similar lines and are meeting with the very best success.

The weed problem is yearly becoming more serious and the losses to agriculture on this account exact a heavy toll from the farmer. On the grounds of purity alone, the expense and labor of cleaning the grain is more than justified.

The following table shows strikingly the range of direct loss due to weed seed in wheat:

Wheat Inspected at Winnipeg

Year	Cars Inspected	Cars Rejected	Pct. Rejected
1904	37,902	603	1.59
1905	61,582	2441	3.96
1906	68,315	4659	6.82
1907	50,845	912	1.79
1908	52,395	1518	2.89

Out of each bushel of wheat inspected by the Minnesota grain inspection department in two years, the average dockage was 19 ounces, very largely due to weeds. Minnesota produces annually about 200,000,000 bushels small grain. This means that had the land been free of weeds the same amount of plant food, moisture and labor would have produced over 3,000,000 bushels more wheat or its equivalent.

This makes an annual loss due to weeds of over $2,500,000 in that state. To this must be added loss of labor in fighting weeds, loss of fertility in moisture, extra cost of binding twine to tie up the weeds and freight charges for shipping the weed seeds. Cleaning seed grain insures the farmer against deliberately sowing his fields with weeds.

Smut damage in small grains is at times extremely serious. It can be entirely eliminated by treating the seed with the formalin solution. This can be done conveniently when the grain is graded and fanned.

Concrete results from the planting of good seed—pure-bred, of high germination test, cleaned and graded——have been compiled from reports submitted by the several hundred members of the Wisconsin association. The following table shows the increase in the yield from pure seed over the average yield from common seed in Wisconsin:

Five-Year Average

Crop	Increased yield p. acre.
Barley	6 bushels
Oats	9.2 bushels
Rye	8.7 bushels

In many cases a poor catch of grass seed or failure of small grains to grow is due to low vitality of the seed rather than to soil and weather conditions usually blamed. Of course with small grain, seed of lower test may be used than with corn, because it may be sowed thicker, but poor seed under any circumstances is a losing venture.

A sample of oats recently examined by the state seed inspector of Wisconsin showed a germination test of only about 30%. The appearance of the grain was excellent, but due to improper storage it had heated in the bin just enough to kill many of the germs without greatly injuring the appearance of the grain.

Six times in succession, grand championship honors for the world's best barley have been awarded to H. E. Krueger, of Dodge county, Wis. Mr. Krueger not only uses pedigreed seed that he has bred up with great care, but cleans and grades rigidly. "Couldn't afford not to." he says.

At the Manitoba experiment station a series of test results that have not been published showed wheat yields in direct proportion to the weight of seed used. Four different grades as to weight and plumpness were used in sowing the test plots.

All points considered, a profitable thing to do—in fact, the only safe thing to do—is to clean, grade and test all small grain seed as well as seed corn. The fanning mill and grader are within the financial reach of every farmer and should be made part of the regular farm equipment.

Testing for vitality is so easy and yet its results so far-reaching that no grain grower can afford to neglect it.

Progress of Rural Science in Nova Scotia

L. A. DeWolfe, Director of Rural Science
Truro, N. S.

Through increased government aid, Rural Science has, during the past two years, made very encouraging progress in Nova Scotia.

The quality of work done at the Summer School in Truro has improved; and, consequently, the improvement is carried to the rural schools by enthusiastic teachers. The number of teachers attending the summer school has increased each year. Last summer, the attendance was 160.

At this school the teachers get actual practice in gardening and conducting exhibitions. In their own schools, therefore, such work is not new.

The accompanying "cuts" illustrate the work done during the session of 1914. That year, we planted and cared for gardens on three vacant lots in the town of Truro. Figure 1, is a photograph of the student-teachers working on one of these lots. We also conducted garden operations on the Alice Street School grounds and the Bible Hill School grounds. Figure 2 shows the student-teachers working with the school children.

For demonstration work, a well-kept garden, occupied one corner of the Normal College grounds. All our students got some practice in this garden. It is shown in Figure 3.

Believing that the school exhibition is the natural sequel to the school garden or home garden, we hold each year in Truro a model exhibition. Here are exhibited the products of the students' handiwork during the year. Figure 4 shows a view of the one held in 1914. In 1915 we held two such exhibitions. One was in June when all regular Normal students could have a hand in the proceedings. The second was in July, when the summer students got their introduction to such work.

Fig. 1.—Student-Teachers Gardening on a Vacant Lot, in Truro, N. S.

As a result of these model exhibitions, very many teachers now hold local exhibitions or send exhibits to county or district centres. Figure 5 shows a one-school exhibition at Mahone Bay; and Figure 6 a similar one at Amherst.

Besides exhibitions conducted by the Rural Science department, such organizations as the Woman's Council have done much to make gardening popular. The exhibit shown in Figure 7 was the first one in Truro under the management of the womans' council.

All these photographs illustrate the work of 1914. In 1915 many exhibits were big improvements on those of the previous year. But no "cuts" of these have yet been made. All our out-door operations are not in the garden.

School gardens, as such, have not proved entirely successful. In most cases the neglect during the summer vacation proves fatal.

Home gardens, however, have been popular. Their value is undisputed, and their success has been encouraging.

In the summer of 1914, seven hundred children made gardens at home and seventy schools exhibited their produce. In 1915 nearly two thousand children had gardens, and one hundred and sixty schools held exhibitions or sent exhibits to near-by centres.

With such an increase as this, we are justified in believing that gardens and exhibitions have now become a permanent part of school work. Furthermore, this work is voluntary. It, therefore, has much more value than will the compulsory traditional subjects of our public school curriculum.

Our most enthusiastic teachers are carrying on this work with so much energy and giving such cheerful cooperation that we are sure Rural Science is now established on a permanent basis. Its future is in the hands of teachers who will see that nothing shall itnerfere with its progress.

A sheep breeder in Vermont has a Rambouillet ram that weighs 325 pounds and sheared 35 pounds of wool. The wool was sold for 30 cents a pound —$10.50 worth of weaving material from that one ram. "Can anyone beat that?" asks the American Sheep Breeder. Sure! R. C. Harvey, of Raymond, Alberta, has a Rambouillot ram that weighs up around 350 pounds and sheared 37½ pounds of wool this past season. The fleece sold for 28½ cents a pound, a net return of $10.54½. Alberta beats Vermon for sheep.

Fig. 2.—Student Teachers Working with the School Children at Truro.

Fig. 3.—A Well-Kept Garden on the Normal College Grounds, Truro.

Fig. 4.—A Model School Exhibition, a Sequel to the School or Home Garden held in Truro in 1914.

Fig. 5.—A One-School Exhibition at Mahone Bay, Nova Scotia.

The P.E.I. Fields of Standing Grain Competition

There were two hundred and sixty-two entries in the Fields of Standing Grain Competition this year, of which one hundred and thirty-four were in oats, one hundred and seven in wheat, and thirty-one in barley. The excessive rain in the spring and early summer injured the grain crops in some sections, and lessened somewhat the number of entries in West and Middle Prince.

It is worthy of notice that among the many varieties of oats formerly grown in this Province, Banner and Old Island Black have far out-distanced all others in popularity.

Some Marquis wheat is grown, but White Russian and White Fife are the staple varieties. There is not as yet the same unanimity of opinion regarding the best varieties of barley.

The judges were again instructed to secure, in addition to the usual information, the number of bushels of seed grain of good quality each exhibitor might be expected to have for sale, in order that the best possible market might be secured. This department is now prepared to give intending purchasers the names and addresses of parties who grew large quantities of grain of the different varieties, true to name, and free from admixture of noxious weed seeds or of other garins.

The judges were: For West Prince, Michael Coughlan; Middle Prince, Michael Coughlan; East Prince, Richard Creed; West Queen's, W. J. Reid; Middle Queen's, Theodore Ross; South Queens, W. R. Reek; West King's, W. R. Shaw; South King's, Walter R. Shaw; East King's, Michael Coughlan.

Judge's Remarks—West Prince

The wheat was above the average. There were a few exceptionally good fields. White Russian was the favorite variety. The Oats, however, were below the average, being thin and short and lacking in uniformity. Old Island Black is still a favorite variety. Many fields of wheat showed evidence of insect injury caused probably by the Wheat Stem Saw-fly.

Middle Prince

The Oats were a little below the average, with a few exceptionally good fields. Banner is the favorite variety in this district.

The Wheat was not very good, as it lacked in stand and a number of fields contained noxious weeds. Insect injury similar to that of West Prince was also in evidence.

East Prince—Judge's Remarks

There were thirty entries for oats, sixteen for wheat and four for barley. Most of the fields entered were free from other varieties and other kinds of grain.

All the oats entered were Banner and the greater part was from hand-selected seed. The oat straw in many sections was affetced by a decay just above the third joint, and owing to some high wind storms many of the fields of oats were very badly broken down. The grain was rather thin.

The wheat crop was excellent. There was some weevil present but not sufficient to lessen the yield materially.

The competition in barley was not very keen but the first prize field was of a high standing.

Perennial Sow Thistle and Canada Thistle were found quite generally over the whole district.

Smut was found in all the fields that were not treated; especially was this the case in wheat.

West Queen's—Judge's Remarks

The number of entries from West Queens was low when compared with a report of the same area for 1914. This can be attributed to the lateness of the season and the uncertainty of the crops in many instances.

The oat crop, for which there was thirteen entries, showed a marked lack of uniformity. Fields grown on the high land showed a superior stand and prospect of yield than those on the low areas. Smut was prevalent where treatment of the seed had been neglected or only partially done but rust was only in evidence on a few occasions.

Wheat will not make as high an average as last year. The possible cause is the lateness and excess moisture of the growing season. Many fields showed a large number of heads only partially filled.

There were few entries for barley as it seemed to be the most affetced by the season, and incident causes. The stand and yield of the crop will be average.

The weed crop was the cause of some otherwise excellent fields of grain receiving a comparatively low score. Such weeds as Perennial Sow Thistle, Wild Vetch and Couch Grass, are worthy of the most noxious characteristics and should be treated as the embodiment of such. In many instances these weeds could be followed from one farm to another in seed grain except where extreme care had been given to cleaning.

Middle Queens—Judge's Remarks

In Middle Queen's the grain crops were good and the competition in wheat and oats exceptionally strong. All the wheat was White Fife except two fields of Marquis and one of Red Fife. Marquis ripens earlier than other varieties but does not seem to be increasing in popularity. The field of Red Fife was particularly good, but had in it some bearded wheat and a little barley. There was one field of No. 72 oats, one of Ligowo and one of Norway. All the remainder were Banner.

Weeds were not nearly as prevalent as might have been expected. Sow Thistle and Canaad Thistle were most abundant, and Wild Buckwheat. Yarrow and Nettle also did some damage.

The importance of treating seed grain with formalin was evident. A few treated fields showed some evidence of smut, but in some untreated fields the loss from it aws considerable. There was practically no damage from rust.

(Continued on Page 170)

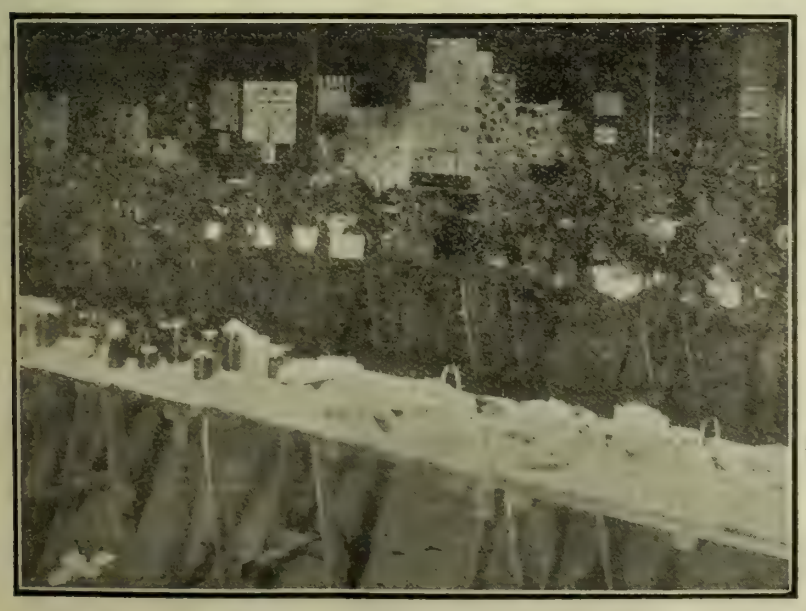


Fig. 6.—A School Exhibition at Amherst.

Fig. 7.—First Exhibit of Garden Produce held under the auspices of the Truro Women's Council.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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DECEMBER 7, 1915.

DATES OF ISSUE.

December 7-21
January 11-25
February 8-22

SOIL CONSERVATION

"Unto everyone which hath shall be given; and from him that hath not, even that he hath shall be taken away from him."

Like many other scriptural expressions the above does not mean exactly what it says. It certainly would not be possible to take something from nothing, although it would be possible to give to a person who already had. As applied to soil and soil culture, however, the quotation continually comes to the mind of a person who has worked much with growing things. A lean or worn out soil will not grow much of a crop and those who have had experience know very well that a run down soil is a very difficult thing to build up and put into good condition for fair crops. The leaner and poorer the soil is, the greater the tendency to become still more impoverished, and necessarily, the poorer the crops secured. In other words, "from him that hath not, even that he hath shall be taken away from him."

On the other hand, with a soil which is in good tilth and well filled with humus and the necessary chemical elements, it is indeed easy to maintain the state of fertility unless unusually exhausting crops are grown. This does not mean, however, that due diligence and care should not be exercised in maintaining the state of fertility as once on the down hill grade the arresting of the depreciation is difficult. A liberal supply of humus or decaying vegetable matter is the most important factor in keeping up of soil in condiiton for securing maximum crop yields. If the soil is well filled with humus the necessary chemical elements may be supplied in the form of commercial fertilizer in proportion to the rapidity with which these elements are removed by the particular crop grown. The maintaining of humus is a very easy matter in soil which is already well supplied. In fact the tendency with some crops is to increase the humus content of the soil rather than diminish it. Soil rich in humus and otherwise in a fertile condition everyone knows will give big crops. In such cases "Unto everyone which hath shall be given."

Poor soil tends to produce smaller crops and rich and fertile soil, if well handled, tends to produce larger crops.

INCREASED DEMAND FOR QUALITY

Scarcity and high prices are not making room for inferior quality in animals, or in anything else produced on the farm. In fact, the demand is becoming more exacting as to quality and condition. This feature in trade is due to education more than scarcity. People are becoming better judges of the things they use and the articles they deal in. Education and instruction along all lines in the necessities of life are being discussed and published in a way that is helping people to an understanding that they never before had.

The public school is teaching agriculture in all its varied forms, so that the boy or girl of the public school has a better technical knowledge of soils, crops, etc., than the old pioneer farmer, though, of course, we must concede him, from a practical standpoint, in the lead so far as his skill of doing and operating is concerned.

The old admonition, "Breed better stock, keep better sires," is not so much in demand now as a few years ago. This may be explained by the force of education that has been constantly exerted, and intelligently, too, in the interests of pure-bred stock. The buyer of a bull at the present time is anxious about quality and good breeding. He is not content with a common animal just because he comes cheaper in price. The price is not so much a matter of consideration as the quality This disposition expressed now is to get better stock and improve it. Very few farmers of this period feel comfortable under the realization that their new bull is not getting a much better lot of calves than his predecessor.

While the duty of every publisher in the land is to preach improvement in live stock and better farming, the general tendency is to absorb what others 'round about are doing when the evidence plainly reflects better methods and better results. A realization of this is all that is necessary to prompt better seed, better growth, better stock and the realization of better profits.

PRIDE IN THE HORSE

A reader of the Breeders' Gazette, visiting in Denver, writes that a splendid pair of heavy harness horses drove up to the door of his hotel as he was standing there. When he remarked that it was a fine pair the hotel proprietor said that his wife bought all her goods of the store to which these horses belonged because she liked to see them drive up to the door. The horses were fitted out with attractively mounted, well polished harness and hitched to a handsomely painted attractive delivery wagon, making altogether a very distinctive appearance.

Many a city woman's heart beats with pride to see a turnout of that character stop at her front door. It has a great advertising value. Just to have the store's name linked with such a high-class delivery is worth much; to have those horses stop before their doors is worth more. It brings trade. This principle is well understood by successful merchants in large cities. The famous turnouts of Chicago department stores have been maintained, like those of Denver, for their advertising value.

Certainly the pride in the horse is a natural human impulse. No mechanical turnout can be quite so beautiful, distinctive or fascinating. We shall always like horses and want to see them. There will always be rivalry between horsemen to see which can own the best and present them to public view in the best form. Carriage makers report a substantial increase this season in the demand for horse-drawn vehicles. The number of heavy harness horses seen on the streets, especially in the east, seems to have increased. For several years the saddle horse has been gaining steady popularity for city pleasure purposes. The pride in the horse is largely responsible for this permanent esteem of turnouts and pleasures in which the horse is a factor.

FARM VALUE OF THE PASTUE

The farm value of the tame grass pasture on the farm is forcing its claim upon the attention of land owners as the native grass sod weakens and deteriorates under the influence of the continuous cropping by the grazing animals. The habit of overstocking is a prevailing fault on most farms, and the tendency of weed growth to take the advantage of these weakened and impoverished pastures is a feature that all observing farmers recognize as an inevitable result.

The civilizing influences of cultivation means the displacing of the native grasses and the establishing of improved tame grass meadows and pastures, with the varieties best suited to the soil and climatic conditions of the country. The reseeding of these lands to native grasses is not practicable, and the resting of the pasture for recuperation under natural influences is out of the question, as the farm requirements demand the use of all the acres in growing crops.

Farm lands in all agricultural districts are rapidly acquiring a value for crop purposes that demands the greatest possible attention in economical cultivation. It is no longer profitable to grow the wild grasses on the farm, except in meadows and where the lands are too wet for cultivation.

The pasture is now one of the most important and valuable crops the farm produces. The hay crop and the pasture crop, or what is termed the grass crop, is producing more wealth than any other crop.

NOTES

The English and Germans recognized more than a hundred years ago the necessity of keeping nature balanced by encouraging bird life and holding insect life in check.

Most accidents can be prevented, but what is each one of us doing to prevent accidents? We must not expect that care will be taken for our safety and never take thought for that of another. —Bulleting Ontario Safety League.

"Amortizing" Farm Mortgages

If one has a correct understanding of the meaning of the term it will be easier to undersand the meaning of the plan. We borrow the word from the French infinitive "amartis," meaning to extinguish. The amortization plan of borrowing money and extinguishing the debt is to pay interest and a small part of the principal every year until the debt is extinguished. There are many so-called amortixation plans of loaning money, but the true amortization provides for a certain payment every year until the debt is extinguished. A debt of $1,000, with interest at 5 per cent, and 3 per cent payment on principal, will be extinguished in twenty years by paying $80 a year. A 5-3 per cent payment will work out as follows if we make a payment of even $80 each year but the last, when the payment will be $88:

No.	Int.	Prin.	Tot'l.
1	$50.00	$30.00	$80.00
2	48.50	31.50	80.00
3	46.93	33.07	80.00
4	47.27	34.73	80.00
5	43.53	36.47	80.00
6	41.71	38.29	80.00
7	39.80	40.20	80.00
8	37.79	42.21	80.00
9	35.67	44.33	80.00
10	33.46	46.54	80.00
11	31.13	48.87	80.00
12	26.12	53.88	80.00
13	26.12	53.88	80.00
14	23.43	56.57	80.00
15	20.60	59.40	80.00
16	17.63	52.37	80.00
17	14.51	65.49	80.00
18	11.24	68.76	80.00
19	7.80	72.20	80.00
20	4.19	83.81	88.00

By paying a few cents more than the $80 the payments will be the same throughout the term. To find the amount of payment to be made when the rate is the same on other sums multiply the sum by each of the above items. If the interest rate was 6 per cent, and 3 per cent of the principal be paid every year, the debt will be extinguished in nineteen years.

The same percentage of principal being paid in all cases, the higher the interest rate the quicker the debt will be extinguished, while the lower the interest rate the longer it will take, on the basis of a payment being equal to the sum of two rates.

If $80 be paid annually in all cases on a debt of $1,000, the lower the interest rate the quicker the debt will be extinguished. A 6-3 rate on a debt of $1,000 will pay out as follows on the basis of an annual payment of $90:

No.	Int.	Prin.	Total
1	$60.00	$30.00	$90.00
2	58.20	31.80	90.00
3	56.30	33.70	90.00
4	54.30	35.70	90.00
5	52.10	37.90	90.00
6	49.80	40.20	90.00
7	47.40	42.60	90.00
8	44.90	45.10	90.00
9	42.20	47.80	90.00
10	39.30	50.70	90.00
11	36.30	53.70	90.00
12	33.00	57.00	90.00
13	29.60	60.40	90.00
14	26.00	64.00	90.00
15	22.20	67.80	90.00
16	18.10	71.90	90.00
17	13.80	76.20	90.00
18	9.20	80.80	90.00
19	4.40	72.70	77.10

If the payment be made a few cents less than the $90, it will be the same each year of the nineteen years.

There is more in the amortization plan than appears at first thought. While the payment is a little more than the usual interest payments, at the expriation of a few years the full debt will be extinguished. It is the only plan of borrowing money and exteinguishing the debt ever employed in any country that gives to the borrower the benefits of compound interest rates. It is compound interest in an inverse ratio.

To pay three per cent of a debt every year on the basis of simple interest will require 33 1-3 years to cancel the debt, but on the amortization plan, if the interest rate be 5 per cent, paying 3 per cent of the debt in twenty years, a gain of 13 1-3 years to the borrower.

If laws are to be enacted which will make it possible to borrow money for buying farms and improving them on the amortization plan, one provision should be insisted on by farmers the one that will make optional with the borrower the cancellation of the debt at any time. It would be neither fair to the borrower nor good for the country if long-time debts were to be placed against the farms of the country with no provision making it possible for borrowers to pay the debt at any time they might be fortunate enough to have the money. Even in cases where rates are given for payments, including interest, a clause may be inserted by virtue of which the borrower may discount his own notes at any time. When the amortization plan of loaning money on farms is made part of a banking or general loan system, the bank or company making the loans issues bonds against these loans, negotiating the bonds instead of the mortgages, as now done by our mortgage and loan companies. In this way the buyer of such securities has for his securities a lien on many farms, instead of the mortgage covering a single farm, as now. In several countries banks are permitted to loan to the extent of 60 per cent of the value of the farm, and then they may issue bonds to the extent of 80 or 90 per cent of the value of the mortgages. This gives the buyer a high-class security, one that sells readily, though drawing only a low interest rate, which in turn helps the farm borrower by reason of the lower rate made possible to him. The more farmers study the amortization plan of borrowing money with a view to becoming more conversant with every detail of its effect, both upon themselves and the country as a whole, the more will they be able to see and understand that no plan or system can equal it for paying off a debt.

By no other plan known can the borrower gain the benefits of compound interest in its inverse ratio.—Carlson's Rural Review.

Learn to Conserve Barnyard Manure

The scarsity and consequent abnormally high price of some of the common fertilizing ingredients is one of the outcomes of the war. We believe this condition may yet prove to be a blessing in disguise. It is urging farmers to a greater effort to conserve their barnyard manures and having once found the way to economize along this line they are bound to keep it in practice. Thousands of dollars worth of the very best of nature's feritlizers annually go to waste in the Martime Provinces. If it will be found possible to stop this great leakage it is only a question of a very short time until a prosperity hitherto unknown will be realized in Maritime Canada. It is generally conceded that live stock is the basis of the most desirable and successful systems of farm management. Why? Because under a system of live stock farming the major part of the crops grown on the farm are not sold in the raw state. They are marketed as a finished product and therefore very little of the plant food that was taken from the soil is sold off the farm, but is returned to the soil from which it came. It is estimated that the manure from a well fed dairy cow is worth twenty-five dollars when well cared for. So far the proper care and handling of manures have been very secondary considerations with the majority of our farmers. Like an oasis in a desert we occasionally find a farmer who is conserving every possible ounce of manure and invariably in such cases every evidence of prosperity is in sight.

Now that the agricultural short courses at the various agricultural schools are drawing near, our farm boys who are too young to join their country's defenders cannot serve their country to any better advantage than by taking advantage of the opportunities offered by these institutions to study the best methods for doing the various phases of farm work. We believe the proper care and handling of manure can not receive too much time in the curriculum of agricultural schools during the coming short courses. There is not a farm boy in the three provinves who can not by intelligent application of the ideas advanced on this subject alone save more than enough to cover his expenses in taking these courses. The instruction received will be an asset to him all his days.

Read the following ten commandments. Ponder them well and put them in practice, one and all of them if possible this winter. If you cannt observe them all under your present conditions try to remember the conditions so that you will not sin against yourself, your farm, or any of these truisms any longer.

Ten Manure Commandments.

1.—Thou shalt consider the value of thy farm manure for it is very great, not only unto thee, but unto them that shall come after thee.

2. Thou shalt at all times endeavor to prevent fermentation and superheating, because it will, in three or four months, mean a loss to thee of from one-third to one-half of the original value of the manure.

3.—Thou shalt not pile the manure under the eaves or on the hill-side where leaching may deprive thee of fertility worth more than what thou payest annually in taxes.

4. Thou shalt not despise the urine or liquid portion, because in it is contained over half the total fertilizing value of the manure.

5.—Thou shalt not bore holes in the stable floor or otherwise facilitate the escape of the liquid manure.

6.—Thou shalt use sufficient litter to absorb the liquid. If thou art short of straw thou shalt use leaves, sawdust or air-dried muck as an absorbent.

7.—Thou shalt not in ordinary farm practice apply the manure too heavily. It is more profitable for thee and for thy children that thy land receive frequent light dressings than heavy dressings at longer intervals.

8.—Thou shalt apply the manure at the time and in the manner to give thee best results. To be able to do this thou must ascertain the results of experiments conducted for this purpose and make repeated trials on thine own farm.

9.—Thou shalt keep live stock on thy farm, lest peradventure thy land become impoverished or blow away from thee because it containeth no humus, or fibre. It is better for thee to practice mixed farming than to follow the single crop system. Mixed farming will protect thee from the times of adversity and cause thy children to rejoice and call thee blessed.

10.—Thou shalt henceforth give thy farm manure more attention. It is of greater value each year than the wheat crop. Thou wouldst hold up thy hands in horror at the thought of one-third of thy wheat being lost, yet thou allowest that amount of fertility to escape from the manure. It is expedient for thee to refrain from wasting thy substance.

—By F. C. Nunnick, Commissioner of Conservation.

The Annual Meeting of the New Brunswick Agricultural Societies United

The second annual meeting of the New Brunswick Agricultural Societies United was held in the Government Rooms, St. John, on Thursday, November 25th, at 2 o'clock in the afternoon. R. G. Murray, the president of the association, presided, and H. B. Durost, the fertilizer expert for the New Brunswick Department of Agriculture, acting secretary since Mr. A. R. Wetmore resigned the position last May, had charge of the books and accounts.

Twenty-four men representing agricultural societies in various sections were present. The president gave a detailed resume of the various needs and steps that were taken before it was found possible to accomplish the establishment of the association. Many obstacles had to be overcome and not the least of these were concocted and slyly pressed by persons and firms who were accustomed to sell fertilizers and fertilizing ingredients to our farmers. The hen that laid the golden egg was about to be curtailed in her operations. Wow! Wow! Wow! The middleman who had fattened at the farmers' expense for many, many moons saw that the beginning of the end was in view. What a howl of distress. What a raking and searching of the provincial statutes to find out if farmers could legally join together for their own protection. Commercial agencies were put on their track to pry into the financial standing of the association. Threatening, bulldozing letters from hired members of the legal fraternity, were received. These and many other tactics were used to try to down the infant association, but to no avail. The infant has since learned to walk and is now able to talk and its joyous prattle has reached the ears of the farmers in all parts of the province. The farmers are rushing to the fold of their respective agricultural societies and by co-operative effort are able to purchase fertilizers, quality for quality, at greatly reduced prices compared with the prices they were accustomed to pay in former years when buying through the agency of the middle man. Cheaper fertilizers means cheaper crop production and more money to spend on other farm and farm home requirements.

The question of purchasing fertilizers for the farmer at the lowest market price has been solved by the association. The plan has been tried and found not wanting. In the course of a few weeks a circular will be issued to the agricultural societies throughout the length and breadth of the province setting forth the best method of procedure re the purchase of fertilizers for the ensuing year. This is necessary owing to the scarcity of potash, which is now available only at prices that are prohibitive.

Following are the officers for the ensuing year:

President—R. G. Murray, St. John.

First Vice-president—B. N. Shaw, Hartland.

Second Vice-president—Stanley Wilson, Rolling Dam.

Directors—W. H. Moore, Scotch Lake; J. E. Hoyt, Hampton; W. K. Allen, Baie Verte; Roy McCain, Florenceville ,and A. G. Turney, Fredericton.

Before the ground freezes put in the bottom part of the hotbed, for you will need to start it early next spring while the ground is still frozen. Dig a trench six feet square and one foot deep and put in your frame, which will take two sashes. Also put away some good rich garden soil where you want to cover the hot horse manure.

HORTICULTURE.

Brown Tail Moth Hunters on Trail in New Brunswick.

Four parties of brown tail moth hunters set out yesterday on their annual survey of the province.

Leonard S. McLaine, of Ottawa, the Dominion government's field officer in charge of the work in this province, will have charge of the survey this year as in the past few years, and will have the assitance of William P. Keenan, of Moncton, as general foreman of the four parties.

The outlook is that there is not likely to be a very dangerous infestation of these dangerous little insects throughout New Brunswick this year, as the nests reported are comparatively few. The work this year will be carried on on the same basis as that of last year and it will be completed in the course of a few months.

Two appointments are yet to be made by the Dominion government for their members of the party, but the provincial department's staff has been completed.

The members of the four parties are as follows:

Dominion government staff—L. S. McLaine, of Ottawa; J. R. Garreau, of Ottawa; W. P. Kennan, of Moncton; G. P. Walker and Arthur Finnamore, of Fredericton; P. N. Vroom, of St. Stephen, and Leander Simpson, of Oak Bay.

Provincial government staff—W. C. Arnold, of St. tSephen; Lancelot Connell, of St. George; S. L. Fox, of Lower Gagetown; H. W. Gilchrist, of Upper Hampstead; Alfred Corbett, of Welsford; L. F. Newcomb, of Upper Woodstock; William Stevens and Arthur Sipprell, of Hartland, and Stanley Titus, of Titusville.

The parties are divided as follows:

Crew No. 1—District of Carleton, Victoria and Madawaska counties and York county, east of St. John River; G. P. Walker, foreman, Arthur Finnamore, Stanley Titus and William Stevens.

Crew No. 2—District of York county, west of St. John river, Nashwaak Valley, Northumberland, Kent and Sunbury counties and Queens county east of St. John river; G. R. Garreau, foreman, H. W. Gilchrist, S. L. Fox and L. F. Newcomb.

Crew No. 3—District of Sunbury and Queens counties west of St. John river and Kings county; W. C. Arnold, foreman, Arthur Corbett, of Welsford, and two additional members to be appointed by the dominion government.

Crew No. 4.—District of Charlotte and St. John counties; P. N. Vroom, foreman, Leander Simpson, Lancelot Connell and Arthur Sipprell.

The Maritime Farmer solicits the ardent support of the farmers in the above mentioned districts for these young men.

Look over your orchards thoroughly, and if you find any suspicious looking nests, be ready to show the boys where they are.

The editor of the Maritime Farmer attended the first brown tail moth meeting held in Nova Scotia. It was in the town of Annapolis Royal. In company with the late Dr. Fletcher, Dominion entomologist, he started on the early morning mixed train for Dibgy. One of the train crew had been at the meeting and in course of a conversation en route he told of his acquaintance with the appearance and devastations wrought by the brown tail moth while he was a resident of the State of Massachusetts. He knew all about it. While discharging or taking on freight at a way station, the train man in quetion showed us his home with a nice little orchard surrounding it and skirting the railroad, just opposite the station. We all had brown tail moth on the brain and were keeping an eagle eye out for the enemy.

We entered the trainman's orchard and then and there, within ten yards and in full sight of the man's door, we picked off no fewer than five large brown tail moth nests. The trainman knew all about the ravages of the moth but he was not public-spirited enough to hunt and destroy them in his own orchard. Don't be in his class. Look around today.

Demonstrations in Massachusetts.

Our old friend and contributor to this paper, W. H. Woodworth, is yet in the orchard business in the Annapolis Valley, growing an average crop of 2,000 barrels during the past few years. Mr. Woodworth has been called from his native province to address fruit growers in Maine and Massachusetts. Apple culture is becoming an important business in the New England states. In our last issue we gave an article on the "New Massachusetts Apple Law." Mr. Woodworth left the gathering of his large crop in charge of one of those boys who went to make up the ten whose faces appeared long ago on the front page of our paper, and journeyed down to Boston to spend the month of October addressing meetings and mingling with the apple growers of the State. The first meeting was held in Fanieul Hall, Boston, which was attending by 200 market men and growers. Barrel and box packing was demonstrated and the Canadian law commented on; also the new Massachusetts law explained. These meetings were held in all parts of the state. With Mr. Woodworth was A. C. Brett, of Amherst Agricultural College. The weather was ideal for the work and 1600 miles were easily covered in twenty-five days over the splendid state roads by auto.

A very interesting meeting was held at Fitchburg in the notable orchard of A. A. Marshall, who grows box fruit only. Mr. Marshall grows Baldwins, McIntosh Reds and Wealthys on his good young trees. He grew 8500 boxes the past season. He caters to the high priced trade, getting $3.50 per box, c.o.d. In this orchard the greatest care is exercised. The entire orchard is in sod, fertilized with bone and potash. The grass is cut twice during the season and remains on the ground as a mulch. The trees are sprayed five times, and fruit is thinned. The trees are gone over three or four times in picking. Only the best colord fruit is picked each time. This orchard is well worth visiting.

Mr. C. F. Copeland, of Colrain, has an old Baldwin orchard in sod which has packed out the past 2 years, 4300 bbls. The fruit sold for $3.65 per barrel, No. 1 and 2, this year.

Near Worcester, at Grafton, another large meeting was held on the Mortimer farm. Mr. E. Mortimer is growing Baldwins and McIntosh Reds, with peaches as fillers. His crop of peaches this year was 30,000 baskets.

Mr. E. A. Hockett is proprietor of the Bolton Fruit Farm. He has 175 acres in apples and peaches, a wonderful sight to one itnerested in fruit growing.

At Amherst, in the orchards of Professors Sears and Waugh, another interesting meeting was held, the students were out in full force, taking a great interest in the work. Amherst Agricultural College has 625 students this year. Professors Sears and Waugh are making a great success of growing apples and peaches.

Sect. Wilfrid Wheeler, of Corcord, is doing great things for the Massachusetts fruit men and he has a band of ready helpers all over the state. The prospects for fruit growing in Massachusetts is very encouraging. We are told that fungus diseases are not so prevalent as in the Anapolis valley. The multiplicity of manufacturing towns gives a ready market for all kinds of fruits. A stranger travelling through the state is impressed with the splendid state roads, the well kept residences and the general prosperity of the people. Everything indicates business which in many instances contrasts very strongly with conditions in the Maritime Provinces.

The Culture of Roses.

The roses usually cultivated in Canada may be divided into four groups so far as hardiness is concerned:

Hardiest Group.—Rosa rugosa and Hybrids, Austrian briars, Provence or Cabbage roses, Damask roses, and Moss roses.

Roses of the Second Degree of Hardiness—Hybrids Perpetuals or Hybrid Remontant, climbing roses of the Multiflora group, and Dwarf Polyantha roses.

Roses of the Third Degree of Hardiness.—Hybrid Tea and Austrian hybrids (Pernetiana) roses.

Roses of the Fourth Degree of Hardiness.—Tea roses.

The hardiness of the individual varieties varies considerably within the groups.

Roses of this group need little or no protection in most parts of Canada. The others must be protected except in very favored localities.

Thus writes Messrs. W. T. Macoun, Dominion Horitculturist, and F. E. Buck, B.S.A., assistant, in Bulletin No. 85, of the Division of Horticulture, entitled "Hardy Roses, Their Culture in Canada," which can be had free on application to the Publications Branch, Department of Agriculture, Ottawa, and which should have an extensive circulation. It would be difficult to imagine an official publication that is calculated to appeal more strongly to the flower lover. The information that is given is complete and thorough. "Site and Soil," "Plants and Planting," "Cultivation," "Winter Protection," "Insects and Fungous Enemies," are all described. In fact, the Bulletin is, as nearly as possible within its limit of 39 pages, an encyclopedia on roses that can be cultivated in this country. Many different varieties are dealt with, tests and experiments are told about, and particulars given that can hardly fail to prove valuable to gardeners, whether amateur or professional. Every section of the country is covered and detailed lists given, with description and illustration, of good hybrid tea roses, for the garden, new hybrid tea roses and good hybrid perpetual roses. Cutlivators of the lovliest flower in creation after reading this Bulletin, no matter what their past experience may have been, it is safe to say, will be encouraged to try again and to persevere. Some of the pointers may be thus condensed:

A soil should be chosen which is naturally cool but not cold.

Strong two-year-old budded plants are the best to plant.

An abundance of moisture is needed, but not swamps.

Soils need to be kept rich by the application of manure.

Pruning is a necessity, but requires study and experience to be successfully performed.

To obtain the first flowers one must relentlessly cut back the bushes each spring to within six to twelve inches of the ground.

It is better to prune early in the spring than in the autumn.

Roses in Canada should be protected from severe wintry weather by being earthed up and covered with evergreen boughs or canvas.

Good foliage is essential to the production of good roses; hence every safeguard should be taken against insects and disease.

Roses grown in the open are usually propagated by budding; raising them from cutting not always being satisfactory.

The time for budding varies in Canada, but from the latter part of July until September the stocks should be in condition in some part of the country.

The Apple Market.

Ottawa, November 30, 1915.

(All prices quoted are wholesale, unless otherwise stated.)

Mr. J. Forsythe Smith, Trade Commissioner of the Department of Trade and Commerce in Great Britain, has cabled the following information to this Branch:—

Liverpool: Sale 24th. Americans only; Western boxes moved slowly; Californian Newtowns 7s to 7s 3d, Oregon Newtons, 7s to 10s, Spitzenberg medium size 7s to 9s. Sale 26th, market depressed, considerable quantities inferior Americans. Canadians ex Avriston, Missanabie, Carpathia, Golden Russets, ones 25s, Slacks 22 to 23s, twos, 18s to 19s, best lots 24s to 25s. threes 20s; Baldwins, ones 19s, twos 15s to 17s, threes, 13s; Starks, ones 20s, twos 16s; Pewaukees, ones 18s; Kings, ones 23s to 26s, twos 23s, threes 16s; Greenings, ones 25s 6d, twos 20s, threes spotted 10s 6d; Ben Davis, ones 17s, twos 15s. Boxes: Baldwins, ones 6s 9d, Greenings, ones 8s 6d, Yakima Winter Nelis pears 13s to 17s, according to size.

London: Sale 26th. Canadian Kieffer pears, barrels ripe ones 25s to 27s, twos 24s to 25s, boxes 5s to 7s 9d. Boxes: Baldwins 6s 6d to 7s. Russets 8s to 9s.

Glasgow: Sale 26th. Canadian Spies ones 24s to 28s, twos 23s to 25s; Kings, ones 28s to 30s, twos 23s to 25s, Ben Davis, ones 17s to 19s, twos 16s to 17s; Greenings, ones 24s to 25s, twos 20s to 22s; Golden Russets, ones 26s, twos 18s to 21s. Boxes: Spies and Kings, ones 10s to 11s, twos 7s to 7s 6d; Greenings, ones 8s to 9s, twos 6s 6d; Manns, ones 7s, twos 6s; Snows, ones, 11s; Golden Russets, ones 8s to 9s, twos 6s 6d.

Information has also been received by telegram from Canadian points, as follows:—

Halifax: Sixteen thousand barrels apples exported during week ending November 27. Fruit keeping well. No. 1's $2.50 to $3, No. 2's $2 to $2.50, Co-operative No. 3's $2. Local market well supplied and retailing 50c to $1 higher than wholesale. S.S. Shenandoah will take 30,000 barrels this week.

Quebec, P.Q.: Ontario apples: Spy No. 1 $6, No. 2 $5; No. 3 $3 to $3.50; Greening No. 1 $4.50, No. 2, $4; Baldwin No. 1 $5; No. 2 $4.50; other varieties No. 1 $4 to $5; No. 2, $3.75, No. 3 $3. Nova Scotia Blenheims No. 1 $4, No. 2 $3. Quebec Fameuse No. 1 $7, No. 2 $6, No. 3 $4 to $4.50. United States Baldwins $4.50. All prices for best stock.

Montreal: No. 1 apples: Spy $5.50 to $6, Fameuse and McIntosh $6 to $7, Baldwin and Golden Russet $4.50 to $5, R. I. Greening $4 to $4.50. Other varieties $3 to $4.50. Winter Nelis pears $4 per box; Keiffer pears $3.50 to $4 per barrel. Approximately 75 per cent of apples sold in this market by auction. Mostly No. 2's and 3's offered. Lowest class 3's selling $1.65 to $2.25; better grade $2.50 to $3 per barrel.

Ottawa: Spy $6 and $5.50, Baldwin $4.50 and $4, Pewaukee $4 and $3.50, Snows $6 and $5.50, Tolman Sweet $4 and $3.50, King $5 and $4, Stark $4.50 and $3.50, Golden Russet $5 and $4, Blenheim Pippin $4 and $3.50, Ben Davis $4 and $3.50 for No. 1 and No. 2 stock, respectively.

Oshawa District: Fruit moving slowly. Very little for export. Practically half the fruit is being packed as No. 3. Good local demand.

Toronto: No change in prices since last report. Larger quantity of apples in store than last year. Practically nothing but No. 3's being offered.

Hamilton: Cull apples selling: Spies $1.25, Baldwins and Greenings 75c per bushel; Spies $3.50 per barrel. It is reported that there are some 9,000 barrels of apples in common and cold storage in Hamilton District. Demand good.

Winnipeg: Arrivals last week; 31 cars Ontario apples, 3 cars British Columbia and 2 cars imported. Imported prices: Apples $3.50 to $4 per barrel; Jonathans $1.50 to $2, and Winter Bananas $2.25 to $2.50 per box; Jonathans and other varieties $1.50 to $1.75 per crate. British Columbia prices; Spies No. 1 $2.50, No. 2 $2.25; other varieties $1.50 to $2 per box; pears $3.25 to $3.50 per box. Ontario prices: Spies No. 1 $6.50 to $7, No. 2 $5.50 to $6, No. 3 $4.75; Baldwins and Russets No. 1 $6, No. 2 $5.50, No. 3 $4.25 per barrel; Spies, Greenings and Baldwins $1 to $2.25 per box. Nova Scotia prices: Kings $5; Ribstons and Blenheims $4.25 to $4.50.

Edmonton: 10 cars received during past week. 2 cars imported apples, 5 cars apples (wrapped) and 3 cars (crates) from British Columbia. B. C. No. 1 Jonathans $1.90; other varieties and imported, all wrapped $1.65 to $1.75. Ontario bulk apples in crates $1.

Brandon: Imported apples in boxes; $2 for No. 2's and $1.85 for No. 3's; grapes (Emperor in drum) $6, Malaga (in keg) $8. British Columbia apples in boxes $2.25 for No. 1's, $2 for No. 2's; in economy crates $1.50; pears in boxes $3.50 for No. 1's and $3 for No. 2's. Nova Scotia apples in barrels $4.50 for No. 1's and $4.25 for No. 2's. Ontario apples in barrels, $6.50 for No. 1's, $6 for No. 2's and $4.75 for No. 3's; pears in eleven quart baskets 50c and in six quart baskets 35c. No Ontario apples in boxes.

Calgary: Prices for No. 1 apples in boxes: Jonathans, Salome, Ontario, Baldwins, Greenings and Hubbardston $1.75, Wagener and Rome Beauties $2 to $2.25, McIntosh $2.15, No. 2's fifteen cents less; No. 1 Keiffer and Windsor pears $3.25.

Saskatoon: No change in prices since last report. Market clear of crated apples. Good demand for Ontario barreled apples and pears. Market well supplied with boxed apples.

Lethbridge: Few cars received last week. No. 1's $1.85 to $2, No. 2's $1.65 to $1.75 per box; crates $1.40 to $1.50. Pears $2.75. Wholesale houses well stocked.

D. JOHNSON, Commissioner.

Figuring Profits in Apple Orcharding.

There is demand for knowledge concerning profit from an apple orchard. The following data are taken as an average from an experiment running 10 years, conducted by Prof. U. P. Hedrick, of Geneva Station, N.Y., in a 10-acre Baldwin apple orchard and give a substantial foundation as to the outgo and income from an orchard in New York state. The data, as far as possible, are given for three units—the barrel of apples, the tree and the acre.

In figuring the profit, the first information necessary is the number of barrels of apples an acre for each year. The exact number for this 10-year average is 116.8. When graded, the acre average for the period is 79.2 barreled stock and 37.6 of evaporator and cider stock. Reducing these figures to the tree unit, we have for barrel stock 2.93; for evaporator stock 1.4; or total for each tree of 4.33 barrels.

The first item in cost of production to be considered is interest on investment. When in full bearing in the prime of life, what is a Baldwin orchard worth? We will suppose the value to be $500 an acre and the interest 5 per cent. This valuation includes not only cost of land, trees and labor, but the deferred dividends of the first 12 or 15 years. It is sufficient, too, to cover the overhead expense of houses and barns. The first expense, item then is $25 an acre on investment, a sum which, divided by 116.8, the number of barrels an acre, gives a charge of 21 cents for each barrel as interest on investment. Since this orchard is but a part of a general farm, only an estimate can be made of the cost of taxes. There are few regions or years in New York in which taxes for such an orchard would be over $1.50 an acre, making the tax on each barrel of apples 1.2 cents.

The next account to be charged to cost of production is depreciation in teams and tools, and interest on the money invested in them. First-class machinery for running the average orchard will cost in the neighborhood of $1,000, the items being as follows: Team $400, spraying outfit $250, harness $50, wagon $75, plow, crates, pruning tools, etc., $115. If we set the depreciation and interest on money at 20 per cent for the above equipment, we must add 17 cents a barrel of apples to the depreciation account. The annual cost of tillage to the acre for the decade was $7.39, making the amount to be charged against each barrel of fruit 6.3 cents. The price paid for team work at the beginning of the period was $4 a day of 10 hours; but the price advanced to $5, a fair average being $4.50. For the cover-crop seed in this orchard, must be addded $2.74 an acre for seed, orf 2.3 cents a barrel of apples. The expense of pruning an acre each year was $3.56. Since there are 27 trees to the acre in this orchard the cost for a tree was 13.1 cents. The cost for each barrel of apples was 3 cents. The average price paid for the work was $2 a day of ten hours. The average cost an acre for spraying was $11.28; a tree 41.8 cents, a barrel of apples 9.6 cents. The last of the cost of production charges is that of superintending the work. The Geneva station paid for this service $300 a year.

Picking, packing, sorting and hauling have been done in diverse ways during the 10 years and the items cannot be segregated. But the total cost of these operations have been 24.4 cents a barrel. The following is a summary of the cost sheet for a barrel of apples: Interest on investment, 21 cents; taxes, 1.2; tilling, 6.3; pruning, 3; spraying, 9.6; cover crop, 2.3; superintending orchard, 25, and picking, packing, sorting and hauling, 24.4, giving a tottal of 93 cents a barrel.

The average price of barrels for 10 years has been 36 cents each; the price fluctuated from 30 to 40 cents. Adding the cost of the barrel to the cost of production we have $1.29 as the total cost of a barrel of apples at the shipping point. We come to the average price of apples for the past 10 years as grown in the orchard. An average of $2.60 was received for all the barreled stock sold, which includes firsts an dseconds. For evaporator and cider stock we have received 72 cents a barrel. The average yield of the orchard for the ten years has been 79.2 barrels of barrel stock an acre, and 37.6 barrels of evaporator and cider stock.

In calculating profits and declaring dividends: Substracting $1.29, the cost of a barrel of apples, from $2.60, the amount received, and a net profit of

(Continued on Page 170)

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NOTE—Only one variety in offer and not less than 100 trees in an order.

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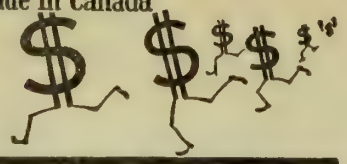

Better Butter and better prices come with Windsor Dairy Salt.
162

DAIRYING.

Use Concentrated Feeds Wisely

Great Differences in Composition of Feeds—Buy Cottonseed Meal Before It Goes Higher.

Too many farmers are feeding stock from habit, rather than from intrinsic value of feed to the animal and the plant food returned in the manure. The careful feeder, before purchasing, considers three fundamental factors—amount of nourishment for the animal, the probable manurial value, and the initial price of the feed.

Those wishing to feed for the largest profit will be greatly helped by using tables A and B herewith, which are made plain by their accompanying explanation. The hay, silage and roughage produced on the farm contain comparatively little protein or fat and oil, but are rich in fibre and starch, and have some sugar. Hence the farmer buys concentrated feeds that are rich in protein or nitrogenous matter so as to balance up the feeds produced on the farm.

Concentrates are bought mostly for their protein and fat. Protein is the most costly element in boughten feeds. Therefore, buy concentrates which will give you the most protein and fat for each dollar that you spend. The table shows that a good standard quality of cottonseed meal will contain 37 pounds of digestible protein in each hundred weight. This is nearly one-third more protein than you can get in the next richest concentrate—old process linseed oil. Table A gives the amount of protein in each of the other feeds named.

Cottonseed Meal Economical

To judge solely upon protein basis, cottonseed meal carries the most nourishment, but at the retail price quoted costs a trifle more than gluten meal. Yet without reference to the other elements, a little figuring shows that a pound of digestible protein at the price quoted costs in cottonseed meal 43 cents and in gluten meal 56 cents. Applying a fair price per pound to each of the digestible elements, cottonseed meal has a comparative feeding value of $1.16 per hundred pounds, compared to only 84 cents for corn meal.

Going over to table B, you will see that cottonseed meal is so much richer in nitrogen, phosphorus and potash that its manurial value is $1.20 per 100 pounds, compared to only 28 cents for corn meal and 77 cents for gluten meal. Hence cottonseed meal is not only the most economical source of digestible protein for feeding live stock, but it also returns to the manure pile four times as much plant food as the corn meal, and much more than gluten by-products.

No concentrate provides digestible protein so economically or returns more manurial value than does cottonseed meal at present prices. The gultens, linseed and wheat middlings, come next.

When it comes to corn products, such as meal, hominy chops and mixed feed (meaning oats and corn ground in equal parts), the comparison is far behind the cottonseed value. Still, the fact remains that thousands of farmers are buying corn meal to feed. These are the ones who are most likely to complain about not getting a new dollar for an old one in the dairy business. They should study the tables and buy accordingly.

This does not mean that cottonseed meal is to be the only concentrated feed purchased. The fact that it is so powerful, means that it should be mixed with something more bulky for best results. This may be bran, middlings, a little gluten or brewers' dried grains, or perhaps a dash of some corn meal if a flesh builder is especially desired. The old notion that cotton seed meal is extremely dangerous to feed still sticks in the minds of some farmers. Several feeding rations of very successful dairymen have been printed in these columns in past months showing that cottonseed meal is one of the safest of feeds, provided you mix it with brains.

Readers understand that protein is the nitrogenous portion of the feed, furnishing material for lean flesh, blood, skin, muscles, nerves, hair, the casein and albumen of milk, etc. Fibre is the framework of plants, and is the most indigestible constituent of feeds. In general, the nutritive value of a feed increases as the proportion of fibre decreases. Add to the fibre the starch, sugar, gums and organic acids and you have what is known as carbohydrates. They are generally spoken of as heat-producing substances, as against the flesh-forming substances, the latter being provided by nitrogenous compounds.

As one looks at the analysis on a feed bag he should watch for the figures giving digestible constituents. The indigestible parts give no food value, but passes off into the manure. Why pay $1.25 to $1.50 per 100 pounds for corn meal which our tables show have a total comparative value of only 98 cents per 100 pounds, when you can buy cottonseed meal that it worth for feed and fertilizer more than it costs?

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It s the best thing you can give a horse for Epizootic, Indigestion, Liver Trouble, Coughs, Influenza, Hide Bound or Blood Trouble. If you have horses or colts for sale, be sure and give them International Stock Food Tonic for thirty or sixty days. Its every-day use will often add $50.00 to $100.00 to their value because it quickly causes them to greatly improve in general appearance. International Stock Food Tonic is a wonderful cow tonic and milk producer. It increases both the quality and quantity.

This famous tonic is endorsed as the surest hog tonic in the world. Twenty-six years' use by over two million farmers indisputably proves its extra money making results.

If you are not using this Reliable Tonic to-day, you are missing a whole lot of actual profit. Get a package or pail at your dealer's. See what wonderful results can be obtained.

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TORONTO, CANADA
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How to Insure Separator Satisfaction

Dealers are in position to do a great deal toward educating their customers properly to care for the machines they sell them. Particularly is this true of the cream separator. The mechanism of the cream separator is not exactly delicate—no more so than the knotter on a binder—but the separator is a little more likely to get out of order.

Most of the complaints dealers receive concerning the results obtained from cream separators proceed from improper adjustment, operation or care of the machine, and it is these things that lead to the return of machines which will do all that is claimed for them under proper conditions. It is, therefore, of the utmost importance for the dealer first to learn just how a cream seperator should be placed, operated and cared for, then to urge his separato· customers to observe the rules. Strange as it may seem, the average farmer pays more attention to suggestions coming from the dealer at time of sale than he does to the directions accompanying the machine; at least, he is more likely to follow directions closely if he has been warned by the dealer.

The bowl should perhaps be given first attention. Owing to the high speed at which it revolves, it is necessary that the bowl be perfectly balanced—and to insure its remaining in perfect balance the machine should be placed on a firm foundation. Solid flooring, a heavy block of wood, to which the sepaartor can be securely bolted, or a concrete block may be used successfully, with the choice in favor of concrete, because it does not become greasy so easily and is easier to keep clean.

When set in place and ready to operate care should be taken to turn the carnk at the proper speed. The speed is usually indicated on the crank arm; but if not there, it can always be found in the setting-up directions. It is also important that the milk be separated at the proper temperature. Some separators skim milk closer than others—leave less butter fat in the skim milk—but all cream separators leave a large percentage of butter fat in the milk when the milk is cold.

It is a good practice to run a few quarts of warm water through the bowl before starting the milk through the machine. The temperature of the milk should be about the same as it is when first drawn from the cow—and the best time to separate the cream from the milk is immediately after milking. After all the milk has been run through the separator, it is a good plan to run through two or three quarts of skim milk to flush out the cream that otherwise would remain in the bowl.

The dealer should advise buyers al-

Comparative Feeding and Manurial Value of Concentrates

	—% or lbs in 100 lbs—			—p 100 lbs—	
	Protein	Fat	Garbo-hydrates	Feeding value	T't'l value
Cottonseed meal....	37.0	12.6	17.0	$1.16	$1,76
Corn meal.....	7.0	3.3	64.0	.84	.98
Gluten feed.....	20.4	8.6	43.8	1.01	1.29
gluten meal.....	25.5	10.4	43 4	1.15	1.54
Brewers' dried gr's.	14.7	4 8	39.3	.75	1.05
Linseed meal.....	28.8	7.1	32.7	1.04	1.52
Wheat middlings...	12 8	3.4	54.7	.87	1.10
Oats and corn.....	7.4	3.0	61.0	.82	.98
Hominy chops.....	7.5	6.8	53.8	.82	.98

TABLE A—Value for Stock Feeding

	Nitro-gen	Phos-phoric acid	Pot-ash	Manurial value p 100	Retail price p 100
	%		%	lbs	lbs
Cottonseed meal....	6.6	2.7	1.8	$1.20	$1.60
Corn meal.....	1.6	0.6	0.4	.28	1.60
Gluten feed.....	3.7	0.3	—.	.55	1.45
Gluten meal.....	5.1	0.3	0.1	.77	1.45
Brewers' dried gr's.	3.6	1.1	0.1	.59	-—
Linseed meal,old pro	5.4	1.7	1.3	95	1.90
Wheat middlings....	2.6	1.0	0.6	.46	1.40
Oats and corn.....	1.9	0.7	0 4	.73	1 35
Hominy chops.....	1.6	1.0	0.5	.31	1.65

TABLE B—The Manurial Value

of the concentrated feeds named in the table above. It shows the amount of digestible nutrients in 100 lbs of each of these concentrates when of fair average quality. For instance, cottonseed meal may vary in its quality, but 100 lbs. of it of average quality should contain 37 lbs. of protein (nitrogen-containing substance) in a form digestible by live stock, 13 lbs. of digestible fat and oil, 18 lbs. of digestible sugar, starch and fibre (carbohydrates). If each pound of digestible fat and protein is worth 2c and each pound of digestible carbohydrates worth 1c as a feed, then the feeding value expressed in money is $1.16 per 100 pounds. Allowing that only one-half of the plant food contained in the concentrate is saved in the manure, and adding this half to the feeding value, we get a total value of $1.76 per 100 lbs of cottonseed meal. The same explanation applies to the other feeds.

of concentrates depends mainly upon the amount of nitrogen, phosphoric acid and potash they contain. This table shows the number of pounds of these three elements in 100 lbs of each of the feeds noted. Allowing 15c per lb. for nitrogen, 5c for phosphoric acid and 4c for potash, we get the manurial value per 100 lbs. Thus 100 lbs. of cottonseed meal contains 6.6 lbs. actual ntirogen, 2.7 lbs. of phosphoric acid and 1.8 lb. potash. These quantities of plant food are worth apparently about $1.20 for manurial purposes alone. The phosphorus and potash are usually all saved in the solid excrement. Even allowing for the waste of nitrogen, at least half of the manurial substances in the meal should be got back in the manure, and more under good management. Retail prices differ, but in the middle and eastern states are around the figures quoted in the last column.

ways to run the machine at the full speed indicated on the crank arm or in the insrtuctions for setting up and operating the separator. If run at a less speed the percentage of butter fat left in the skim milk will be greater. As much as 1 per cent of the fat may be lost on account of the slow speed, whereas the correct speed would cut this loss down to almost nothing. When the machine is operated at a speed higher than rated, there is danger of breakage. The ear soon becomes accustomed to the hum of the bowl when operated at proper speed.

The dealer should impress upon the minds of the purchasers the importance of keeping the separator clean. This part of the work is frequently neglected. It should be made a part of the regular work of the dairy. To insure cleanliness the separator should be taken apart quite often so that the gears and other parts can be well cleaned. The oil collects dust particles which, if not removed, will soon cause the machine to turn harder. Oil cups need to be cleaned out often and the oil should be replenished each time the machine is used. The best separator oil should be used. The machine should be washed every time it is used. The dirt and slimy sediment removed from the milk collects in the bowl, and if not washed out the efficiency of the bowl's separating capacity is materially impaired. To kill the bacteria the bowl parts should be placed in an oven for a while and then exposed to the sun: in fact, all dairy utensils should be exposed to the sun every day, for sunshine destroys all disease germs more surely than any other purifier.

A Hard Question to Answer

The Farmer's Review says:

Fifteen years ago an assistant in the dairy department of the University of Missouri began to keep records of the milk and butter production of a small Jersey cow. This assistant has gone and others have come and gone, but the faithful cow is still on the job. In the fifteen years she has given 108,968 pounds of milk and 5,833 pounds of butter. Her best year's record was 13,322 pounds of milk and 730 pounds of butter. The cow has given birth to twelve calves, which have sold for $2,400, or an average of $200. Her milk and butter products, figured at market prices, equals a still higher total. The approximate cost of keep was $50 a year, or $750 for the entire period. Anyone can figure the profits. What is such a cow worth? What is the value of a dairy herd composed of ten or twenty such individuals?

But there is a bigger lesson contained in the history of that cow than merely her commercial value.

1. It tells eloquently a story in favor of the oft-much despised Jersey. That's a wonderful record for any cow of any breed to make.

2. It tells volumes concerning the great importance of putting the best performing blood one can get into a cow. Give her a sire particularly that will boost her to a long life and a big record. It is the owner of the mother of such a cow that is wholly responsible for the kind of sire she is to have.

3. Don't consider that a little extra money for a well bred, prepotent sire is thrown away.

What Hinders Profit in Dairying ?

The other day a friend addressed us the above question and asked us to write him our answer. We did so, and here it is:

The main thing that hinders profit in dairy farming is poor cows. By that we mean keeping a lot of cows which do not pay any profit on their keep. If the average cow farmer could be induced to enter upon a vigorous campaign against himself and his lack of good cow sense, as well the poor cows that he insists upon keeping year after year, there would be a revolution in this cow business. Put the question any way you please and it comes out the same:

1. We never yet saw a herd of cows of high average quality that did not pay a profit. Did you

2. We never yet saw a herd of low producing cows, no matter what their breed, that paid a profit. Did you?

3. We never yet saw a dairy farmer who resolutely set to work to cull out and grade up his herd but that made money by it. Did you?

4. We never yet saw a dairy farmer who let things run along in a loose, unsystematic manner; who would do nothing to bring up the standard of production in his herd; who made any money in dairying. Did you?

Put these questions together; apply them to the situation as it exists on your farm and about you. Deduce from them what you should do to raise the standard of profit and you will find yourself doing a lot of things that help that are not mentioned here. Start the farmer to looking at the question of profit from the right standpoint and he must be a dull man who can not then improve his condition.—Hoard's Dairyman.

Hand Separator Cream.

Patrons of cream gathering creameries frequently complain of the variations which occur in the pec.entage of fat as revealed by the test of the cream delivered from time to time. These variations have given rise to more or less dissatisfaction on the part of the patrons, and have been the cause of unnecessary friction between them and the managers of creameries A series of tests and experiments bearing on this poitn have recently been completed by the Branch of the Dairy and Cold Storage Commissioner of the Department of Agriculture, at Ottawa, and the results obtained are published in circular No. 14 of that Branch. It is desirable that creamery patrons should know the results of these experiments. Managers of creameries may apply for and secure from the Publications Branch of the Department of Agriculture, Ottawa, sufficient copies to supply each patron. Individual copies will be sent to those who apply for them.

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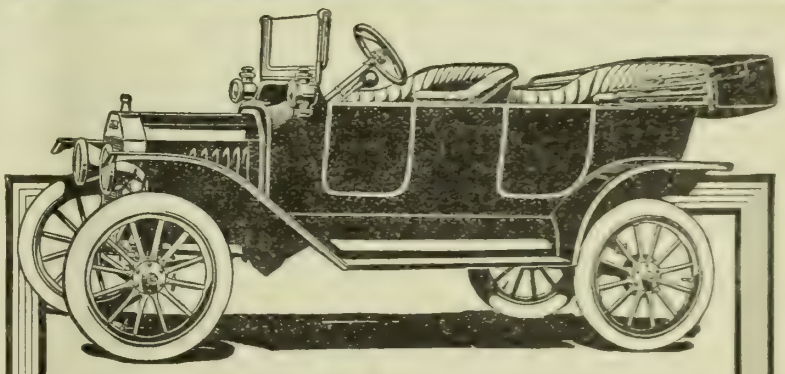

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LIVE STOCK.

Disease of Animals and How to Treat Them.

At a recent institute school in the third district of New York, Dr. Hamilton, one of the state veterinarians, gave a most excellent talk on some of the common diseases of farm animals. In the first place, in giving medicine, it is best to have it well diluted, either with water, oil, or milk. Many medicines are strong, and if not diluted are liable to burn or, at least, cause discomfort. When giving medicine to a horse, some people pour it through the nostril, as a horse does not swallow well. This should never be done, but three or four drops of medicine may be placed in the nostril, as the sensation thus produced may aid the horse to swallow. In all cases when an animal strangles, drop the head at once. It is better to lose a little medicine in that way than to allow the animal to strangle. The reason for avoiding strangling is not altogether the discomfort of the animal, but for the same reason that medicine should not be administered through the nostril of a horse, namely, that either act may result in some of the medicine being drawn into the lungs. If that occurs there is great danger of pneumonia resulting, and pneumonia is almost always fatal.

Milk fever was formerly considered a fatal disease, but now it is unnecessary to lose a case, if taken in time. It appears soon after calving, usually within one or two days, but in rare instances as late as a week or ten days. It appears to be a sort of paralysis, especially of the hind parts, and is likely to attack the best cows. There is a decreased milk secretion, little manure, and the cow does not walk right at the beginning of the disease. She wabbles, and finally goes down as in paralysis. Do not give any medicine by the mouth, at least not in any quantity. If the cow is cold, fifteen or twenty drops of aconite may be placed upon the tongue, and if weak, thirty to forty drops of nux vomica may be administered, but usually give nothing. Inflate the udder. That is the only way to combat the disease. It is a good plan to get a veterinarian but any one may give the treatment if careful. There is some danger of getting garget if one does not use sufficient care. Some use oxygen to inflate, but clean air is as good. A regular milk fever outfit is desirable for the purpose, but if none is at hand, one may use a bicycle pump if everything is made perfectly clean. Cleanse the udder and teats, using carbolic acid in the water for washing. Carbolized water may be used to sterilize the milk tube, or the tube may be boiled thoroughly. Inflate slowly and continue until the air bubbles out. Tie the end of the teat with tape or with a slake twisted bag string, and leave for three hours. It is not wise to leave the tie too long, as it interferes with circulation in the teat. Do not milk out the udder for eighteen to twenty-four hours.

Milk fever may be prevented in a measure by leaving most of the milk in the udder for a few times. Do not leave the calf with the cow, as he may suck all the milk. The reason is that too much blood congests in the udder and circulation is not good. The second day three-fourths of the milk may be drawn, usually.

There is a disease of horses that is similar in its causes and effects to milk fever in cows. That is, there is congestion and poor circulation. It is called black water. It does not come on while the horse is in the stable, but usually while traveling the first mile or less after standing for some time, as over Sunday or longer, and it attacks the heavier horses, not very frequently the light road horses. The horse commences to lag, sweats about the flanks, appears lame, and there is paralysis. When the symptoms are first discovered stop the horse and apply a blanket, whether in the road or a barn. Get the horse to a shelter or barn if possible. Frequently the animal recovers in a half hour, but if he goes down he is liable to die. A veterinarian is needed in a bad case. The bladder should be emptied, and if the muscles become rigid, heat should be applied. Hot salt in small sacks is best, and apply over the kidneys. Hot water may do if nothing better is at hand. The trouble may be prevented by dividing the grain ration when the horse is to remain idle for a little time. On Saturday night a bran mash may be given to a heavy work horse that is to be idle over Sunday, and a tablespoonful of saltpeter may be added. When starting, after standing for a little time, drive slowly for the first half mile.

In case a cow commences to bloat seriously it is frequently best to tap the left side. The causes of bloating may be several. A change to good growth of pasture, or eating too much grain, if loose, or indigestion from whatever cause may cause bloating. It is safer, generally speaking, for a farmer, to tap a cow than for a veterinarian to tap a horse. Select the place most distended, usually six or eight inches back of the ribs, clean off the hair and disinfect by using a five per cent solution of carbolic acid. Take the spout of an oil can from the mower. Disinfect the knife and the oiler spout by boiling thoroughly, or by means of the carbolic solution, thrust in the blade to its full length, and before removing the knife blade work the nozzle down by the side of it, and let the gases escape through the nozzle. As a rule, one pound of Epsom salts may be administered with good effect.

In cases of choking, it is a good plan to place a stick in the mouth, well back, and fasten there with cords over the head, and give the animal some exercise. Sometimes by standing on the left side, the obstacle which causes the choking may be detected, and worked up with the hands. When almost up, a quick thrust may force it far enough so that the cow can reach it with her tongue and then she will be able to bring it forward and chew it out. If not, use a clevis to hold the mouth open and one man can reach down the throat far enough to get the obstruction when the other works it upward. If the obstacle is too low down, it may be necessary to use a probang, to force it down. As a substitute, it is possible to use a one-inch rope, or a trace from a double harness, a piece of rubber hose, or even a whip stock. Oil well and be sure to force far enough down. It is farther to the stomach than one is apt to think. The piece should be six or eight feet long.

"Colic in horses is a source of much loss in New York state," said Dr. Hamilton. Some horses are particularly subject to one form or another of it. Proper feeding and watering may prevent tatacks. It is better to water horses the first thing in the morning, than feed hay and later grain. The stomach of a horse is small and if grain is fed first, some of it may be washed out when the horse drinks and before it has reached the proper stage of digestion.

Gas colic is the most common and is due to gas in the intestines. There may be bloating on the right side. The pain is continuous. It is all right to let the horse lie down and there should be ample space for him to do so. To get up and down every few minutes is not advisable and the horse should not be allowed to throw himself as there is danger that he may rupture something. A little soda and ginger may be good or a two ounce dose of turpentine in a pint of raw linseed oil may be used.

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Spasmodic or cramp colic, said the doctor, may be brought on by giving water or grain in too large amounts when the horse is warm and tired. It is best to feed lightly under such circumstances, and when new hay is fed, give salt. Cramp colic is a cramping of the bowels. Bloating is not common until later, and there is usually intermittent pain. If the pain is severe, laudanum may be given, and two ounces is a full dose. It is best given in oil. One ounce rose of chloral hydrate may be given in a quart of water. If the horse gets sleepy, he is better. If not sleepy in half an hour, give half as large a dose as before.—Hoard's Dairyman.

Starting the Calf on Way to Cowhood.

It is easier to teach the calf to drink if it is never allowed to nurse. Aside from this consideration, however, it is more advisable to leave the calf with the cow for the first two or three days, especially if a considerable amount of inflammation is present in the cow's udder. By so doing the calf gets a thriftier start in life and also proves helpful in reducing the inflammation of the udder through the process of nursing. When the calf is taken from the cow it should be fed three pounds of its mother's milk—immediately after milking—twice daily or better two pounds three times a day. It is very essential that the milk be given at a temperature approximating 98 degrees Fahrenheit and that the receptacles conveying the milk be kept scrupuolusly clean and free from germ life. At best scours are liable to affect the calf when hand feeding is resorted to. To fully eliminate this liability it is very advisable to follow regularly and persistently the practice of stirring in the milk one teaspoonful blood flour which can be obtained directly from the packing houses. This feed is one of the best known bowel correctives. I refer to it as a feed for in reality there is nothing that can be added to the milk or given to the young calf that will supply in so digestible a form identically the nutrient which is necessary to narrow the ratio of the milk nutrients and furnish protein from which muscle, lean meat, cartilage, blood, etc., are made. —Prof. H. V. Van Pelt.

Canada's Live Stock Industry.

In competing for the markets of the world there is no branch of industry that exceeds in importance that of live stock breeding and raising. Paraphrasing the old Jingo cry, we have the land, we have the will and we have the climate. What is needed is the means, and ever more means, and simultaneously the ways of marketing. However divergent in views and theories people may be, it cannot be denied that they are all united in a common effort to improve both agricultural and industrial conditions. In helping the one the other is being aided. The interests are inextricably involved. If either is especially prosperous both ultimately must be, although one may feel the benefits of extra demand and high prices before the other.

In the past few years especially, all the provincial governments as well as the federal government have bent much of their energies towards the improvement and extension of agriculture. While a deal of scientific effort has been devoted to the cultivation of the land and improvement of productions of the soil, sight has not been lost of the needs and necessities of that other branch of inestimable worth—live stock, meaning thereby horses, cattle, sheep and swine. In the latter direction pure-bred animals have recently been placed in various districts where their services were previously difficult to obtain, the registration of pedigrees has been nationalized, systematized and subsidized, grants towards greatly liberalizing the premiums at exhibitions have been made, a special branch has been established in connection with the Experimental Farm system at Ottawa to investigate the cause of disease, to

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give counsel to breeders and to control outbreaks of infectious or contagious ailments, judges and lecturers have been appointed free of cost, cold storage facilities have been arranged and refrigerator cars equipped and paid for, grants have been made under the tremendously beneficial Agricultural Instruction Act with its ten million dollar attachment, for the encouragement of veterinary education and research and everything possible has been done for the development and increase of co-operation.

Important and valuable as are and have been the efforts above enumerated in the interests of live stock breeding the devotion of the Federal department and the Provincial departments has been by no means limited to them. In fact as far as present human ken can travel little has been left undone. But one of the greatest lines of endeavor has yet to be mentioned, namely the improvement of marketing and transportation facilities. While this object has never been lost sight of, constant attention having been bestowed upon it in various ways, it remained for the present Dominion Minister of Agriculture to take the matter boldly into his own hands and, with the assistance of a capable staff, to devise a policy calculated to lead to definite, distinct and permanent advancement. Without inquiry and investigation nothing can be methodically and satisfactorily accomplished.

With this principle in view a marketing commission was appointed, the duties of which were to ascertain advantageous points of sale and to effect and bring about the most convenient and economical arrangements for disposal, shipment and carriage to destination. It was in following this policy negotiations were carried on for the purchase by the British government of six million pounds of meat canned in Canada.

Owing to high freight rates, disturbances in shipping and scarcity of boats, unwonted difficulties have recently been experienced in exportation and even in handling across the continent. It is towards remedying these and placing matters in a much better light and on a greatly improved footing that the commission has been created. In many ways there is evidence that this is being accomplished, although undoubtedly there are obstacles to overcome that will be continually cropping up. Nor is the appointment of the aforementioned marketing commission the only step that is being taken for the advancement of the live stock and agricultural interests, but a commission of influential, widely-known and experienced business men has been appointed to go into the whole subject and to report upon the most advisable measures to be taken for the advancement of farming, breeding and raising, shipping and selling and financing, and for the aggregate prosperity of the country.

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Keeping Hogs Free of Lice.

Disease and unthriftiness in hogs are usually, if not always, accompanied by the presence of body parasites, internal or external. The farmer who is feeding a lousy pig or a ticky steer is simply putting up feed enough to support the animal and the parasites as well.

This direct extra outlay, however, does not represent the whole loss. No animal can thrive and do its best when tortured and tormented by lice. The dipping vat and the rubbing post are two of the principal agents in general live stock sanitation through which we may hope to be free from animal diseases.

The southern people are fast ridding their herds of ticks and of the Texas fever they carry by means of the dipping vat. The western sheepman with the assistance of state and nation has practically cleaned the range of the scab parasite. The corn belt hog grower is ridding his hogs of lice and keeping them clean by the dipping vat and more largely by the oiler in some form.

The hog oiler is simply an outgrowth of the old rubbing post idea. Hogs are notoriously lousy animals and become especially so in winter and early spring when dipping in open vats is almost out of the question. Lousy hogs, cholera and other diseases almost always go together.

We used to recognize the lousiness of the hog by fixing a rubbing post where he could scratch himself, but merely scratching did not and does not get rid of the parasite. The modern form of rubbing post is a hog oiler of some sort where vermin-destroying oil comes from the post, distributes itself over the hog's skin and makes and keeps him clean.

"I used to spread crude oil on the surface of a hog wallow formed from the overflow of my tank and this kept the lice down in summer and fall," writes H. C. Williamson, a successful Nebraska farmer, and hog grower. "I learned, however, that in winter and spring the vermin multiplied and worried the hogs incessantly and I found no convenient and effective method of combat until the oil-rubbing post came to my notice. I gave them a thorough trial and found that they solved the problem."

Cold weather is no obstacle to their successful use. Specially prepared vermin oils may be used, while the heat of the animal's body will help spread crude oil if this be used. A little kerosene added loosens up and thins the mixture if extremely cold weather has made it gummy.

The Average Hog in Farm Economy.

An ancient treatise on hogs reads as follows: "Hogs are most extraordinary animals; but though in many respects rather disagreeable they are of very considerable importance to the community at large and to farmers in particular. There is no other animal affords so much human sustenance in flesh, in proportion to the time in

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which it is raised, and in no instance has nature shown her economy more than in this race, their stomachs seeming to be intended as a receptacle for many things that other creatures refuse and which, but for them, would be entirely wasted, for they industriously gather up and greedily devour what would otherwise be trodden under foot—the refuse of the fields, the gardens, the barns and the scullery." From which it appears that the independent and gentlemanly hog has carefully guarded and preserved in his march down the ages those qualities which constitute him now and at all times a pig. The woman at the exhibition remarked also, "It's no wonder they call them pigs," without any explanation whatever. It would look as though hog nature was well enough understood to make it possible for those speaking of hogs to put their ideas into well packed expressions.

About the disagreeable aspects of the hog we do not propose to go further than to notice that the hog is a much maligned creature. He is the only one of the domestic animals that takes specific care not to foul his nest. If there is still any disagreeable feature in hog keeping it is due to the breeding and habits of the hog man. The interesting and necessary thing to settle is the place of the hog in farm and general economy. The ancient writer quoted above didn't omit much in his sketch paragraph—the value of the hog to the community, to the farmer and the capacity of the hog for the conversion of waste foods.

Pork a Standard Commodity

There is no class of meat of greater general usefulness. It is the best suited of all for stored meat. This applies to all classes of consumption. The hog has adjusted his cuts susceptibly to the people of both strong and delicate stomachs, in town, country and camp. Everybody knows this, of course, but it is worth while telling the producer over again that because pork is so easily cured it is always available to the consumer which has made it a commodity of universal standard demand and hence it should be a universal factor in farm enterprises and production. The trouble seems to be that the demand is not judiciously nursed or fed. Of course, all meat products suffer from capital monopoly and want of effective and actual competition in marketing, but there are certain troubles and disorders on the marketing side that are peculiar to the hog. Pork is peculiarly subject to ups and downs in marketing, especially downs. Hogs breed young and produce more abundantly than any other kind of farm stocks and gluts are more easily produced. When high prices are running everybody gets out for a few sows. In a few months the hog population is increased from five to ten fold. Hogs are commonly produced or at least finished on a considerable quantity of concentrated feed and there is a stated time at about the age of six or seven months when the value of quality at least, of pork is highest and when the limit of profit in feeding is most nearly reached and they practically have to be sold. When prices fall the unloading process is intensified. Young or half finished hogs are run on the market and prices are cut worse than ever. The farmer becomes disgusted and goes out of hogs. That is what happened last winter when grain went so high. Feeding and breeding both stopped. Now, the prices of good sows is high again. Everybody is in the scramble to get in and start another glut. The quick multiplication of hogs seems to have the effect of putting farmers in when they ought to be out and out when they ought to be in.

Commercial Agriculture Overworked

The trouble really comes from the desire of the western farmer for big business. Hogs on the average farm are or should be a kind of side product, exception being made in the case of the man with great natural aptitude for hog raising or with a taste for producing a good quality of pure-bred stock. Hogs in large numbers go wrong easily and go wrong badly with the fellow who has no eye for the care and condition of a hog; but every farmer should be in, and in all the time, for the economical production of his own meat, and for a smaller surplus besides, according to how well he likes the business. The commercial agriculture bog has got hold of us in rather aggravated form. With many people it stands for the practice of selling everything you raise and buying what you need or rather want. The buying habit favors the development of wants beyond need. It does not pay to sell four cent beef to buy thirty cent bacon just to prove that your farm business is a real commercial enterprise. The right copception of the commercial idea in relation to farming is the careful use and conservation of the plant and the economical production of precious commodities to the limit of the resources of the plant.

Home-Making and the Hog

We can even modify further our conception of commercial agreculture. The first claim on business enterprise is home-making. Most of us will have to assimilate our land enterprises to this conception. So far land holding has been three-fourths speculation and one-fourth home-making, but the easy outside money has quit coming and land values are being determined by

(Continued on Page 170)

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THE HORSE

The War Horse.

Why am I left upon this barren field,
A horse whose master never more will call—
Wounded and bleeding where a cruel ball
Did pierce me through; while all around me rise
Moans of the dying handicapped like me?
Men call it war, and claim 'tis ours to bear
Heroes into the fray; and, when they fall,
To agonize and suffer, e'en as they.
Yet, wherefore, if there is no life beyond
For such as we, should suffering be borne
That calls for Christian faith and martyr's blood
Proudly we learn to step to martial notes;
Madly we sniff the battle from afar;
Bravely we bear a hero to the strife;
Yet when he falls, though we like him are torn,
With murderous shot and shell and moaning lie,
Why must we bear the agony and die
Uncared-for where we fall? God's love enfolds
His meanest creatures; horse and man, alike,
Are folded in the mantle of his care.
Oft on the battle-field man leaves us where
We drop our burden. 'Tis a horse can tell,
Writhing in agony, why "war is hell."
—By Helen M. Richardson.

Care of the Mare.

As the period of gestation varies in individuals and sometimes in the same mare in successive periods, no one can state with reasonable preciseness when foaling will take place.

The approximate period is usually stated at 11 months, or 330 days, and it may be most safely stated that it will vary from 322 to 346 days. In extreme cases foaling has been delayed until 400 days have elapsed, and first pregnancies often last a year. Where parturition is delayed it is often accepted as an indication of a male foal.

A farmer, who, in his anxiety to give intelligent care to the mare that he believes is in foal, wishes to register the earliest symptoms of pregnancy, should, says Mr. H. W. Potts, in the 'Agricultural Gazette" of New South Wales, on the cessation of oestrum or heat, note any enlargement of the abdomen three or four months after, although this is not always notiecable, particularly with fillies. A slight falling beneath the loins and hollowness of the back may be present, or the udder may be observed to change its shape, becoming rounded, firm, and free from wrinkles, and the teats more prominent. These changes in the udder come and go during the period of gestation. A steady increase in weight daily after the fourth or fifth month is a sound indication, as well as the swollen and reddish state of the vaginal mucous membrane.

After the seventh or eighth month the movement of the foal may be deteced by the hand or fist being pressed firmly against the abdominal wall in front of the left stifle. An examination after the mare has had a drink, or during feeding, will find the foal moving in the womb.

During Gestation

Treatment during the period of gestattion must be directed on common sense lines. A draught mare may be given steady work up to within a few days of foaling—in fact, she is all the better for it—but a walking pace should not be exceeded, and any strain or strenuous effort should be avoided, especially as the period of foaling approaches. Shaft work is generally associated with the possibilities of accident or over-exertion, and should be discarded. If a mare is a noted sweater, then over-exertion should be avoided, seeing that its continuance may interfere with milk secretion. The bowel discharges require to be watched, and constipation corrected by bran mashes and green foods. The main diet has to be arranged in order to meet the demands of mother and foal. Good chaff and a little grain, and other foods rich in those elements which form flesh and bone, may be required to supplement grazing.

Symptoms

The ordinary symptoms of approaching parturition are familiar to most breeders. The abdomen becomes more pendulous, the udder is enlarged, the teats thickened and extended, and the muscles of the croup less prominent, while the lips of the vagina enlarge and appear slightly parted. Often there is a viscid discharge. The waxy substance found on the opening to each teat drops off about twenty-four hours before foaling and milk may flow from each teat on the application of pressure. At times the teats do not fill until after foaling. Sometimes the wax on the teats is absent; and yet again in other cases the usual symptoms of milk formation in the udder are delayed until after foaling. When the time for foaling approaches the mare becomes uneasy and excited. Lying down, elevating the tail, and straining, are all marked symptoms of pains. These become more frequent until the climax is reached. Natural parturition is rapidly and easily accomplished. A mare may be seen grazing comfortably and on revisiting her half an hour later she may again be found complacently grazing, but this time with her foal at foot. It is well to give the mare at least one bran mash daily for two or three days, the aim being to avoid giving her any class of food likely to cause constipation. The after-birth, which, as a rule, is naturally ejected in from three to eight hours after giving birth to the foal, should be buried or burnt.

Bog Spavin.

Bog-spavin is one of the most troublesome diseases of the hock, not so much because it is at all a common cause of lameness, or incapacitates the animal from work, as because to the owner, who is generally greatly concerned as to the probable consequences of the enlargement, it is a constant eyesore. It undoubtedly depreciates the value of the animal if offered for sale, and treatment for its reduction is not attended with any great measure of success. These re marks, so far as they relate to the enlargement being more in the nature of a blemish than a cause of lameness, apply, however, to only one form of enlargement, for there are two kinds of bog-spavin, identical in appearance externally, and occupying the same situation, but very different in their importance and effects.

Two Kinds of Bog-Spavin.

The least serious form consists of an excessive secretion of synovia or joint oil, or of a dropsical effusion into the cavity of the joint; and the more important, of inflammation of the joint due to sprain or other injury. Fortunately the least important form, as regards the occurrence of incapacitating lameness, is the most commonly met with, and, but for the eyesore and the possibility of its assuming an aggravated form would attract very little attention. Such blemishes must not be regarded as constituting actual unsoundness, but they certainly depercíate the value of the animal commercially. Hence the desire for their reduction. Bog-spavin may be, indeed generally, associated with faulty conformation, and thus attention is directed through it to the shape and character of the hocks, which are joints that it is most important to have perfect.

Ordinary Bog-Spavin

The characteristics of ordinary bog-spavin are a soft, puffy, fluctuating swelling, suggestive to the touch of a windgall, as the wellknown swellings about the fetlocks of hard-worked horses are called. It is distinguishable from the swelling associated with sprain by the absence of heat and tenderness to touch, and of anything like severe lameness when at work. This period at which soft swelling most commonly makes it appearance is when the young animal is first taken into work, or during the breaking-in process. More rarely it is developed while still running in the field, and it then arises from galloping or jumping in play or mischief, which are, of course, causes of concussion and strain. As it is just at the time when the owner is thinking of putting the colt into work or of converting it into cash that the swelling appears, it is generally more seriously regarded as a bar to usefulness than there is any occasion for. The purchaser, especially if a dealer, may be trusted to make the most of the blemish, even if he is sufficiently experienced to recognize that the swelling is of small importance. We can hardly blame him for providing against possible untoward consequences by offering less money than the animal would be worth if perfect, for he may presently be a seller, and in turn have to listen to the molehill being magnified into a mountain.

Treatment Undesirable

To the owner of a horse with a bog-spavin that does not cause lameness, and especially if he intends to keep it for work, we offer the advice let it alone, since the results from treatment are rarely in proportion to the time occupied and the expense incurred. When treatment is resolved upon it is practically the same as that for thoroughpin, with which bog-spavin is often associated. Bog-spavin trusses, for the reduction of the swelling by pressure, are sold by veterinary instrument makers, but the remarks concerning the similar appliance for thoroughpin apply with equal force here, and readers should refer to them.—Veteran.

Winter Management of Foal.

During the first winter, foals need particular care. Any neglect during this season is bound to result in arrested development. Foals have not the hariness of the older young horse stock, and as in their first year foals make their best growth it is essential that they should be generously fed.

Feeding

This in the winter season will consist of a liberal amount of hay, a fair allowance of grain, a little bran, a little straw chop as fill-belly and to aid digestion, and some chaff mixed with the oats; a liberal allowance of sliced roots also will be advantageously fed to take the place of the grass which is lacking at this season.

The hay which is supplied to the foals should be the best and sweetest that is available, and there should be no stinting. Meadow hay is the best, but a little clover hay may also be fed as an adjunct to it. As to the exact quantities of oats that should be fed, something depensd on the breed of the foal, and there are other considerations; not a few farmers hold that foals can do altogether without any, but without a fair amount of oats foals cannot thrive and grow properly in the winter. The grain should in all cases be served out with a liberal hand, and, as regards this, one must be guided by the condition of the foals. When a foal is backward, or not in sufficiently good condition, its allowance of oats should not be increased. The grain should be served in a crushed state throughout the winter, and should be divided into two portions, one being given in the morning and the other late in the afternoon.

Bran is an excellent food for foals, and up to a couple of pounds per day may be usefully fed. Then the allowance of oats need not be so large. In the case of backward, unthrifty foals, it is a good plan to include about a pound or so of crushed linseed cake a day, or in the case of Shire colts, a couple of pounds, if the expense is no object. In due moderation, linseed cake is useful when a foal needs special attention. We have said a little straw-chop may usefully be served along with the corn, but nothing is gained by feeding it to foals, since though useful as a fill-belly it does not satisfy their needs as regards nutriment. There is no harm in placing some sweet oat-straw before the foals to pick at will; oat-straw, however, is more suitable for yearlings, and two and three-year-olds. Sliced roots, served with a liberal hand will help to keep their bowels in good order, and prove beneficial in other ways.

Housing

It is decidedly to be recommended that foals be always housed in comfortable quarters overnight. They

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should not be let out of a morning until the early rawness has worn off, and before being turned out they should have a feed of grain, etc., and be foddeerd. A straw yard, with good shedding, serves admirably as night quarters for foals in the winter, while an empty barn also answers very well, indeed there is nothing better.—English Exchange.

Carrots for Horses.

Carrots possess a great dietetic value, and they exert a laxative effect upon a horse's bowls. This effect is due to their succulency, about 85 per cent. of the weight being water. Carrots are thus a most useful supplementary food for stabled horses when green forage is not available, and their use for horse-feeding purposes is greatly to be recommended. They promote the general health of a stabled horse, and help to produce a good gloss upon the coat. But they do not prove as laxative when fed in small quantities as is oftentimes supposed. The laxative effect of a daily allowance of three or four pounds of carrots is not particularly marked, and as a rule when this quantity of carrots is fed daily to stabled horses bran mashes at stated intervals ought not, as a general rule, to be dispensed with altogether. A daily allowance of as much as six or seven pounds of carrots can well be fed daily to stabled horses without having very marked laxative effect upon the bowels. Even when this quantity is provided an occasional bran mash will be required in order to maintain the bowels in the right working order. Owing to the cost of carrots it is usually not practicable to feed as much as six pounds per day, but such an allowance may be fed with great advantage when a plentiful supply admits of this being done. Seven or eight pounds can be fed each day if desired. There is no necessity whatsoever to cut them up into slices or pieces; in fact, it is not advisable to cut them up, as when this is done there is some risk of the horse being choked through a piece of carrot sticking in the throat. This risk may not be very great, but that is no reason why it should be run. Carrots must first be freed from the earth sticking to them, and should be washed, if necessary. They have a soothing and emollient effect upon the mucous membranes of the throat, and it is, therefore a good plan to include a liberal allowance,—say, up to eight pounds, or even nine pounds—in the diet of horses suffering from cold or cough. When owing to sickness a horse is off its feed it frequently relishes a few carrots in preference to other food. and the appetite of a sick horse can often be tempted in this way. Finely chopped they form a uesful kind of appetizer for mixing with other food when a sick horse does not eat his food properly.—G.

How Colds are Contracted.

The popular idea is that colds and the bronchial and pulmonary troubles that follow in their train invariably result from exposure to cold, wet, and inclement weather. In some cases they may arise from these causes, but the majority are due to causes exactly the reverse, and more colds are contracted form breathing a close, impure atmosphere than from being exposed to inclement weather in the open. A horse used to a warm stable and clothing, and perhaps newly shorn of its coat, seems to take no harm when turned out in cold weather, provided that it is well fed, while the same animal, brought from apparently uncomfortable conditions outside, exposed to wet and every wind that blows, and placed in a stable with other horses, almost certainly develops a bad cold and cough. Colts, when first brought under cover, especially in a stable that has other occupants, are pretty sure to cough and run at the nose, and they often require most careful nursing to avoid pulmonary complications and permanent affection of the wind. In bringing in colts for breaking purposes, it is a bad plan to put them in a stable with other horses. They are pretty sure to go wrong, and this, of course, interferes with their training. They should be put into a shed or roomy box stall that is well ventilated, and gradually accustomed to the change from a life of freedom in the open air, where there is room to breathe as well as to move.

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I can say that I have for the past three years been a user of GOMBAULT'S CAUSTIC BALSAM, and have found it to be all that is claimed for it, and have in a great many instances recommended its use to others.—R. D. KIRK, Antigonish, N.S.

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I have been selling GOMBAULTS CAUSTIC BALSAM for years, and it is giving my customers the best of satisfaction. I have also used it myself on different ailments with the best results. Too much cannot be said in its favor.—W. T. PRICE, Berkeley, Ont.

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Police Horse Swims to Rescue.

While bathing off the beach near Throgg's Neck, Long Island, Mrs. Catherine O'Daleen suddenly became exhausted and called for assitance. The first to respond and to reach the drowning woman was the horse of Mounted Policeman O'Brien, who bore his rider without urging to the side of the struggling woman, then wheeled and dragged them both to shore. Great applause from the crowd on the beach greeted the rescuers and while the woman was being resuscitated, hundreds of men and women gathered around the horse who stood at attention and received their praise and pettings.

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POULTRY

The Influence of Soil and Climate.

It is often imagined that the reason why poultry-keepers of other lands have always been so successful is because they are more favorably situated than we are as regards soil and climate. When it is asked why we have to import such huge quantities of eggs from abroad we are told that it is because fowls of other lands are more prolific, the result of their living under more favorable conditions. Never was there made a greater mistake. To say that our climate is responsible for the importation of such vast quantities of eggs and poultry is altogether wide of the mark, and will not bear close examination. It is just as easy to produce eggs in England as it is in Italy, for instance, or table fowls in Scotland as it is in France.

England's Premier Position

For generations and generations past England has held the premier position in the breeding of high-class stocks of all kinds. The skill and experience of our breeders have, of course, played an exceedingly important part in maintaining the high standard of excellence, while the somewhat cramped conditions under which our people have had to work, and the consequent rigid selection of the breeding stock, have likewise exerted an influence. At the same time, had the conditions been unfavorable, or at any rate as unfavorable as many would have us believe, this high standard of excellence could not possibly have been maintained.

Climatic Conditions Abroad.

This applies to poultry in the same way as it does to larger stock. We have only to examine the conditions in the countries from whence we have been in the habit of importing our huge supplies of eggs to realize that we are more favorably situated than they are. In Russia and the Netherlands the exetremes of temperature are far greater than in the United Kingdom. In France, Italy, and Austria-Hungary the winters are far colder and the summers far hotter than they are with us. In the United States one of the most successful poultry-keeping countries in the world, the climatic conditions are not nearly so favorable. As a matter of fact, we are most fortunately situated, and we cannot fairly blame our climate for our lack of success in the past. It is quite wrong to suppose that very hot summer are advantageous. Those who have travelled in the States or in many countries of Europe during the summer months will bear me out in this, for they must realize that the scorched pastures and the dried-up streams cannot possibly be beneficial. There is no doubt but that one of the reasons, if not the main reason, why fowls in Southern Europe are so small and of such poor edible qualities is due to the intense heat of the summers. The less extreme the temperature of both summer and winter, the better it is for stock of every kind.

The Question of Soil.

Soil also plays an important part in the health and prolificacy of fowls. When selecting a breed for a certain locality or for a certain purpose, the nature of the soil should always be taken into consideration. This is proved by the fact that if a breed of fowls is exported, say, to Australia, frequently it changes in many of its chief characteristics. Even in the different countries of Europe this is the case. Examples could be given were it necessary to do so, but probably nineteen out of every twenty poultry keepers have observed this for themselves, without perhaps divinging the cause. As a general rule, it may be accepted that white-fleshed fowls thrive best on a light soil, that those with grey flesh and legs do best upon a medium soil, while those with yellow legs and flesh thrive anywhere, even upon a heavy clay.

The Non-Sitters

So far as number and size of eggs are concerned, the non-sitters are our best fowls. These are small, active breeds, usually very hardy, rapid growers, and poor in their edible properties. They are mostly spring and summer layers, although when they are hatched at the right time of year they may be depended upon to produce a certain number of eggs during the winter months. They cannot, however, compare with the general purpose varieties in this respect. Without exception they all produce white-shelled eggs. The following are the conditions best suited to them:

Soil. Breeds recommended.
Clay— White, brown or buff Leghorn, Ancona, Redcap.
Medium—Black Minorcas, Andalusian, Houdan.
Gravel— Any non-sitting variety.

The General Purpose Breeds

These are the birds which combine both egg-producing and edible qualities. They are more prolific than the table varieties, although their meat properties are not quite so good, while they are better on the table than the non-sitters, although they do not produce so many eggs. The hens are quiet sitters and reliable mothers; the chickens grow fairly quickly; the cockerels make capital table birds. General purpose fowls are the best winter layers we have. They all without exception produce tinted-shelled eggs. The following are the conditions under which the general-purpose breeds thrive best:

Soil. Breeds recommended.
Clay— Plymouth Rock, Wyandotte, Light Brahma.
Medium—Wyandotte, Plymouth Rock, Langshan, Orpington.
Gravel— Any of the above breeds.

The Table Breeds

These birds excell in their meat or flesh-producing properties. They are generally large, with a deep and broad body, a perfectly straight and long keel, carrying a large amount of white meat upon the breast and wings. Their bones should be soft. Rapid development and readiness to fatten are also important features. The following are the conditions under which the respective breeds thrive most satisfactorily:

Soil. Breeds recommended.
Clay— No table variety thrives well on clay soil.
Medium—Faverolles, Indian Game, Sussex.
Gravel— Dorking, Gabe, Sussex.
—Expert, in English Exchange.

Too Many.

Do not make the mistake of wintering too many birds. Over and over again it has been proved that it is much easier to get a higher percentage of eggs from a small flock in a given space than from a larger number. Indeed, I have known many instances of a breeder disposing of one-fourth his flock and then getting as many eggs as he got before.

Think what a cut it makes in the profits, with grain at the present high prices, to be practically feeding one-fourth your flock for nothing. But it may be even worse than that, for often when birds are overcrowded, though given the very best of care, they refuse to lay altogether, which of course means a dead loss of everything fed to them. Not infrequently when a portion of my flock was doing badly through the winter have I received the most glowing reports from previous customers of the work of birds I had sent them from this very part of my flock. I do not think in these cases the purchasing parties could have given their birds any better feed or care, but they could give them proportionately more space; and space is something that must always come into prominent consideration in the profitable keeping of fowls.

The breeder is justly deemed "lucky" who is found when fall comes with a lot of nice pullets, but his luck is bound to go a-glimmering if he tries to carry too many of them through the winter. They may continue to develop and mature satisfactorily as long as they have plenty of room, through ability to run out on the ground, but close them up with the coming of cold weather in too limited quarters, and they will soon be found going backward instead of ahead. Their formerly bright heads will become pale, their combs shrunken and their manner will show none of the alertness which characterizes the bird about to lay. A lot of grain will then have to be expended to rally them from this lapse, and meantime probably the most profitable period for market eggs have passed.

There is always a good demand in the fall for stock well calculated to make winter layers, and while it may seem hard for us to part with young and vigorous hens, partly through moult or rapidly-maturing pullets on which we have expended much time and trouble, it is infinitely better to let them go at a fair price than have snow come and find ourselves overstocked. There is certainly no money in hens nowadays unless each individual is made to yield close to its greatest possible profit, and this can be done only by giving the birds ample room.—John L. Woodbury in Maine Farmer.

PEERLESS PERFECTION
Horse High — Bull Strong — Pig Tight
It's made right—from high grade material. In the construction of our PEERLESS FENCING we use Open Hearth steel wire. By this process impurities are removed from the metal, thus eliminating one of the chief causes for the rapid rusting of fence wire. PEERLESS is guaranteed to give you satisfaction. Send for catalog. Agencies nearly everywhere. Agents wanted in open territory.
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Whitewash Banishes the Mites.

If you are going to be a successful poultryman, young man, you must get after those mites. They sap all the life out of the hens and cut down the egg supply enormously. They kill off large numbers of the most promising chicks. They are the worst enemies with which your flock has to contend.

But you can get rid of them if you will. Have a thorough housecleaning some fine day as soon as possible. Clean up the dirty floor. Take out the roosts and scrape them, and clean out the dirty nests. If they are too badly infested, burn them up and make some new ones. Brush down the cobwebs from the corners.

Then take a spray pump and spray the whole inside of the poultry house, getting into all the cracks and corners with a mixture of one part crude carbolic acid to ten of kerosene. This kills any of the mites which may have fled to the cracks and crevises for safety. After this is dry, put on the whitewash It may be put on with the same spray pump, but it sticks better and lasts longer if it is put on with a brush. Lice and mites can't stand whitewash.

After the whitewash has thoroughly dried, refit the house with clean roosts and nests, and put some clean straw on the floor. If you wish, you can dust the hens off with lice powder before admitting them to the house. Repeat dusting again in about a week, or, better, apply the blue ointment. It is a very good time to do the job. If you will do this, you will find that the lice have departed for some other henhouse, whose owner is not so good a poultryman as you.

To improve farm flock, cull out the slow growing chickens; the old hens with long toenails; the long or "crow-headed" hens; the poor winter layers; the hens that stay on the roosts.—Maine Farmer.

Blackhead in Turkeys.

Turkeys are exceptionally scarce in all the western provinces this year. What is the cause? Last year they were plentiful and cheap; this year they are scarce and dear. Probably because they were cheap last year, a good many growers forsook the raising of turkeys. Undoubtedly, heavy losses resulted from the continued wet weather. There is a possibility that many birds died of "Entero-Hepatitis," or Black-head. While this disease is common to all species of fowl, it is usually seen in its most aggrevated form in turkeys. Losses in the United States have been enormous, and in many instances whole flocks died off before the owners knew what was wrong.

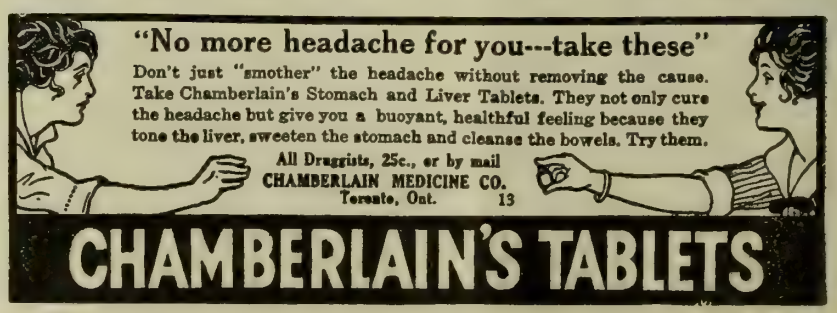
The disease is most sweeping in its effect, and it would pay every turkey-raiser to acquaint himself with its origin and course, its prevention and cure. Bulletin No. 17, Health of Animals branch, Dominion Department of Agriculture, just issued, deals with it most comprehensively. The following excerpts will prove of value:

Nature of the Disease.

The early symptoms presented by affected birds are not particularly characteristic. Affected birds, however, will separate from the remainder of the flock. This separation or lagging behind does not appear to be a desire for seclusion but the result of being unequal to the task of keeping up with the others from physical exhaustion. The droppings are more fluid than normal, and may be streaked with yellow. Gas bubbles may be sufficiently numerous to give a frothy appearance.

The head may be, and usually is, darker in color than normal. This dark coloration may disappear and reappear at irregular intervals while the bird is at rest, but excitement usually causes a bright red coloration.

The best means of early diagnosis is the examination of the droppings for evidence of diarrhoea or a yellow coloration of the faesces. Feeding time may prove the most appropriate for such observation. Where this is not convenient, owners should provide some means of determining an infection at the earliest possible moment.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Don't just "smother" the headache without removing the cause. Take Chamberlain's Stomach and Liver Tablets. They not only cure the headache but give you a buoyant, healthful feeling because they tone the liver, sweeten the stomach and cleanse the bowels. Try them.
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CHAMBERLAIN'S TABLETS

Course of the Disease

Affected birds, if untreated, may die in a few days or may linger for a week or longer, after the first appearance of symptoms, according to the virulence of the infecting agent. In some cases the onset is so rapid and free from outward manifestations as to be recognizable only by an autopsy. Without treatment, or a complete change in diet and surroundings, the course is usually fatal.

Prevention and Treatment

All affected birds should be isolated at once.

The placing of the poults on clean, sanded board floors in a dry, well-lighted and well-ventilated building with a southern exposure, is considered a means of prevention. This continued contact with the floors, however tends to weaken the poults. We believe it to be an advantage to see that they are quartered on sanded board floors at night, and prevented from ranging at the early morning when the grass is wet. When the birds are older, the roosting places should receive consideration. The free application of lime and sulphur wash (that used in spraying fruit trees is suitable,) on the ground under the roosting places, and the ground on which they are reared, two or three times during the season, will destroy any infection on the ground.

Some apparently remarkable recoveries have followed the use of muriatic acid, but one cannot hope to bring all affected birds through an attack.

The acid to be used is a teaspoonful of muriatic acid. (Acid. Mur. Dil. B.P.) in a quart of drinking water. This acidulated water should be placed in a porcelain or glass vessel, and is suggested in the hope that the birds may be brought through an attack sufficiently to be placed in marketable condition.

Treatment of Hen Manure

We find coal ashes to be the best material to keep hen manure in nice shape. We do not have dropping-boards, but have the long space under the roosts partitioned off, in order to keep out the litter and every two or three days, or when it seems necessary we throw sifted coal ashes under there. If the ashes are not sifted when we get them, we put them in a shallow box, with wire screening for a bottom —about half-inch mesh—and as we slide it along on the two by three roosts, we shake it rapidly, and in that way get it well distributed. When there is an accumulation of six or eight inches, we remove it to a building where it is kept perfectly dry until spring. Then we use it on all kinds of crops, sometimes in the hill or row, but usually apply it with a lime broadcaster. If you use care in keeping out the litter—we have a partition about 16 inches high—there will be no trouble in running it through a broadcaster. If your droppings come up in lumps, from not using enough ashes, then shovel them into a pile against the back wall, the whole distance, and then throw some cracked corn or wheat over them, and your biddies will scratch them until they are fine and nice. This is perhaps beside the question, but I think most farmers do not pay enough attention to hen manure. Last spring we set out a number of apple trees. The only manure used under the trees was hen manure, about a shovelful mixed with the soil in the bottom of the hole. The ground was planted to sweet corn and was fertilized with a corn fertilizer. At the last cultivation turnip seed was sown broadcast over the piece, and special pains taken to get plenty of seed around the trees. While that hen manure must have been six or eight or more inches under ground, the turnips close around the trees are today two or three times larger than those elsewhere.—L. in Maine Farmer.

Chemical Control of Egg Laying.

For several years the Maine station has carried on experiments on the general physiology of the egg-laying process in hens. The underlying idea in these studies has been that before the farmer and poultryman could gain the desired control over egg production, it would be necessary to learn more in regard to the mechanism by which eggs are produced. Eggs are produced by the organ commonly called the egg cluster. The problem studied is of the controlling factors in the working of this organ.

The station has found that a definite chemical substance, called "yellow bodies," controls the activity of the egg-laying organs. If a little of this substance be injected into a hen in active laying, it stops the activity of the oviduct immediately and completely. Other chemical substances lack this specific power. After such inactive substances are injected the bird goes on laying just as well as before.

The next step was to find out how to start activity of the organs when the hen was not laying. Experiments along this line are not yet completed, although progress is being made. Certain substances give promise of favorable resutls because of their known action on cattle, but these have so far failed to bring about the expetced results in poultry. There is, however, good reason to believe control may be made by chemical means.

The work will be continued at the station as opportunity offers. The favorable effect on egg production sometimes gained by cayenne pepper or mustard is not due to activity of the egg organs. The stimulants act as a mild stomach tonic, better enabling the hen to handle her rations, thus producing eggs.

Missouri Contests Close Soon.

The Missouri egg laying contest, with 50 pens of five hens each, at Mountain Grove, Mo., closed on November 1. The total number of eggs laid in September was 3002. The National contest being conducted at the same place with 79 pens of five hens each, closed at the same time. In the Missouri contest White Leghorn hens owned by J. R. Mooney, of Butler, Mo., won the September cup by laying 100 eggs. Single Comb Rhode Island Red fowls owned by Woodman & Smith of Wycombe, Pa., won the cup in the National contest with 94 eggs.

Missouri High Pens to Date.

	Eggs
Barred Rock	999
Barred Rock	996
White Leghorn	994
White Leghorn	914
White Leghorn	913
White Plymouth Rock	910
White Leghorn	878
Buff Wyandotte	869
White Leghorn	860
White Leghorn	846

National Contest Record Pens

	Eggs
White Leghorn, Eng	882
White Leghorn, Pa.	806
White Leghorn, Eng.	805
Rhode Island White, Ill	786
Rhode Island Red, Pa.	745
White Leghorn, Pa.	735
Black Leghorn, Ga.	733
White Orpington, Wis	722
Rhode Island White, N.J.	721
White Leghorn, Ky	708

Goose, Turkey and Duck Quills.

Before the war the supplies of goose, turkey and duck quills used for commercial purposes in England were obtained mainly from Austria and Germany, but since the outbreak of the war these imports have ceased. The present supplies are inadequate for the needs of the manufacturer and there is a steady demand for quills of good quality, says the Smallholder.

The following scale of prices, which vary according to quality, will afford a guide to the present value of suitably selected quills:

	Per cwt.
Large goose quills	$12.16 to $14.60
Small goose quills	7.30 to 9.73
Large turkey quills	12.16 to 14.60
Large duck quills	6.08 to 7.30

The quils should be tied in bundles weighing about 8 ounces, with the barrels all pointing in one direction. If possible, they should, for the sake of convenience in transit, be put up in lots of not less than 56 pounds.—Claude Dyer, Leeds, Eng.

WHOOPING COUGH

No cough sufferer old or young can take Veno's Lightning Cough Cure without benefit. In whooping cough its quick, sure relief is truly startling. Mothers who do not know Veno's often think that whooping cough must go on until the season changes. They are wrong. Veno's cures whatever the season, cures at once and cures thoroughly.

Won Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

There is nothing in Veno's Lightning Cough Cure that the most delicate child may not take freely. It contains no opium, morphine, or paregoric. The curative power of Veno's comes from strengthening principles which enable the breathing organs to throw off attack and not from narcotic drugs. It may be used with fullest confidence for old or young. Only real and speedy benefit can result. Veno's is the remedy for—

Coughs and Colds
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Price **30** cents.

Difficult Breathing
Whooping Cough
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Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors, The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

Kidney Disease Cured Sworn Statement

Of Mr. Wesley Maxwell, Who Gratefully Gives All Cred to Dr. Chase's Kidney-Liver Pills.

It is one thing to make big claims for a medicine and quite another thing to produce irrefutable evidence that it actually cures in serious cases.

We prefer to let the cured ones speak for themselves, and that is why you find in almost every newspaper the report of someone who has been cured by the use of Dr. Chase's medicines. Today we present the sworn statement of Mr. Wesley Maxwell. When a man goes to this trouble in expressing his gratitude there can be no question of the benefit he has received. Mr. Wesley Maxwell, Orangeville, Ont., writes: "I have been using Dr. Chases' Kidney-Liver Pills, and I must tell you that before I started using them I could only make water with the greatest difficulty, and had very severe pains in the back. I am completely cured now by the use of these pills. Before that I used a lot of doctor's medicine without any benefit that I could see. I am thankful for being cured, and can recommend Dr. Chass'e Kidney-Liver Pills very highly."

SWORN STATEMENT

"This is to certify that I, Wesley Maxwell, of the Township of Caledon, was cured of kidney trouble by taking Dr. Chase's Kidney-Liver Pills.

'Wesley Maxwell."

(Sworn before me as correct this 6th day of January, 1915.—Wm. Hawkins, Sen. Justice of the Peace.)

This statement is also endorsed by the Rev. Geo. W. Robinson, who is Mr. Maxwell's pastor.

This cure will interest a great many people who are suffering as Mr. Maxwell was with kidney and urinary troubles. It will only cost you a quarter to buy a box of Dr. Chase's Kidney-Liver Pills and put this medicine to the test. We are sure that you will be thankful to the writer for describing his cure to you. For sale at all dealers, or Edmanson, Bates & Co., Limited, Toronto.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

When Hiram Missed the Mark

(By Jennie Ford Thompson in New England Farm and Home.)

"Next Tuesday is election day," remarked Mrs. Barton, as she bestowed a last vigorous rub upon the stove she was polishing and stood back to admire her work. Her husband stirred uneasily in his chair.

"I really ought to have some new slippers," he replied, irrelevantly. Then, as his wife made no reply, he squirmed again, and let his paper fall to the floor. "This woman suffrage business," he commented, not looking at her, "the papers are full of it. It makes me sick! I'd hate to have a woman who'd go running around to 'lection and such places, neglecting her house and letting her family go to smash!"

Mrs. Barton smiled upon her husband, with puzzling brightness.

"My house isn't neglected, is it, Hiram?" she queried, with a complacent glance about her tidy kitchen.

"I should say not! And I'm mighty glad you haven't got any such moonstruck ideas in your head."

Mrs. Barton made no reply, but her smile was as sweetly complacent as before, and after watching her uncertainly a moment, Hiram arose and strolled out to the barn.

During the following week the coming election was not alluded to by either Hiram or his wife until Saturday evening, when Mrs. Barton observed:

"I think I'll go to town with you Tuesday, Hiram."

Hiram feigned surprise.

"Oh! was you thinking of going? Now, that's too bad! You ought to have told me before, for I've went and engaged the corn shellers, and they'll sure be here on Tuesday."

She cast a quick look at him, then glanced down.

"Oh, that need make no difference," she replied. "We can go directly after dinner."

"But the dishes," he objected, weakly. "You surely won't go and let them stand!"

"Why not?" she queried. "I have left them before."

"Well, suit yourself of course," doubtfully, "but I wouldn't form such habits." Mrs. Barton's only reply was her own curious little smile, and the subject was dropped.

All the next day Hiram racked his brains to find some plausible excuse for keeping his wife at home, but none could he find until on Monday, when Joe Myers' hired man expressed a desire to go to election. Hiram eagerly offered the use of his buggy and Bessy, his driving mare, which surprising offer was eagerly accepted.

Tuesday came and with it the corn shellers. Early Tuesday morning Bessy was harnessed to the light buggy and slyly driven out and delivered into the hands of Joe Myers' hired man.

Serenely unconscious of her husband's manoeuvre, Mrs. Barton bustled about the house, preparing dinner for the hands. Pies, flaky crusted and dainty marked and pinched, were set out on the long shelf on the screened porch to cool; various hissing sounds of stewing, roasting and baking issued from the kitchen door, and mysteriously delightful odors floated through the open windows.

The shelling was in full swing when Hiram, going suddenly around the barn, almost collided with a figure that had been creeping and peering around the corner, and which now scrambled hastily to its feet.

It was a man, very ragged and very dirty, with rough, tousled hair and beard and a cringing half-hearted manner that marked him a common tramp.

Hiram viewed the fellow's sodden bulk with a brooding frown.

"What are you doing here?" he demanded, sharply.

The fellow shifted uneasily, keeping a furtive eye upon the pitchfork Hiram carried.

"W'y," he returned in raspy, wheedling tones, "I jest thought as how you might let a feller stay to dinner."

"Well," Hiram glanced back at the workers, "I'm not in particular need of an extra hand, but I guess we could give you a chance to shovel till noon."

The tramp drew back. "Oh, say now," he whined, "I ain't lookin' fer a job. I've walked quite a ways, an' I thought I'd like to rest up a little till dinner time."

Hiram's eyes hardened. He raised a sturdy brown fist.

"Now, you git," he ordered, and the tramp got.

A well-prepared feast was gracing the long table when the hungry horde trooped into dinner. The shelling was finished just at noon, and an hour later men crowded into the wagons and started for town, five miles distant.

Hiram lingered about the house in an unaccountable manner, while his wife hurried around clearing the table and piling the dishes into the pans. Presently she spoke.

"Hadn't you better be hitching up, Hiram I'm almost ready."

Hiram's start of surprise was rather over-acted.

"Why, did you mean to go?" he asked innocently. "I wish I'd known that. I've went and let Joe Myers' man have Bess and the buggy! Thought you'd given it up. I couldn't have gone anyway. I've got some fence to fix."

A very small spark glimmered in Mrs. Barton's black eyes, but she regarded her husband with her old inscrutable smile.

"Oh, well," she returned affably, "that need make no difference. I thought perhaps that you wouldn't want to wait for me, so I arranged to go with Mrs. Myers."

Hiram gazed helplessly at her a moment, then turned round abruptly and strode out to the barn. He entered Bessy's empty stall and stood there moodily kicking his heels against the manger. The roll of wheels passed the barn, but Hiram did not glance up.

"If that woman don't beat all," he muttered. "I just knew that smile meant something," His mouth twisted half humorously. "I'll bet she knew all the time what I was about. Somehow, she always does. I wonder how 'twould do now if I was to come right out and forbid her to go? I believe I'll try it." And, assuming a resolute and courageous air, he marched back to the house.

Somehow, as he neared the kitchen door, the task he had set for himself loomed larger and larger. On the step he halted in uncertainty. Perhaps he ought to reason with Emily. If she had only said what she meant to do, he would know what to say to her then. Perhaps she wasn't intending to vote. He believed he'd ask her.

He looked into the kitchen. His wife was not in sight. The pantry door stood partly open, the key in the lock. Perhaps she was in there. He listened. Yes—he could hear her moving about.

Just then a sudden diabolical idea entered his head. His eyes glowed with sudden resolution. He tiptoed lightly across the floor, pushed the door softly shut, turned the key and dropped it in his pocket. Then, as silently as possible, he hurried out of the house and away across the fields, where there was some fence that needed mending.

"I've fixed it this time," he chuckled. "That's once I turned the trick! I guess she won't like it much, but I won't have it said that my wife went to election," he concluded grimly.

He had declared—though not in Emily's presence—that his wife should never vote; and now, as he reached the broken fence and set to work, he thought grimly that, for this time at least, she would not.

Down the hill a buggy came driving.

"Hello, Hi," called the occupant genially, "Ain't you goin' to 'lection today?"

"Guess not, Steeve. Horses all been to work and I lent Bess."

'Well, get in and go with me, can't you? I come back right past your house."

Hiram hesitated. Dared he leave Emily a prisoner so long? There was only one window to the room, and it was small and high. She couldn't possibly get out. Then he reflected that he would have to keep her there anyway until it was too late to vote, for she would find or make a way to go to town if she really wanted to go.

"Well," he replied doubtfully. "I ain't fixed up any."

"Oh, that's all right," the other assured him. "A fellow doesn't have to fix up to vote." And with a guilty feeling that he wasn't playing the game fair, Hiram climbed into the buggy and was driven rapidly off to town.

Arrived there, he stoped short. What was the matter with his eyes, he wondered.

A woman was just coming out of the store ahead of him, and if he wasn't drunk or crazy or something like that, that woman was his wife.

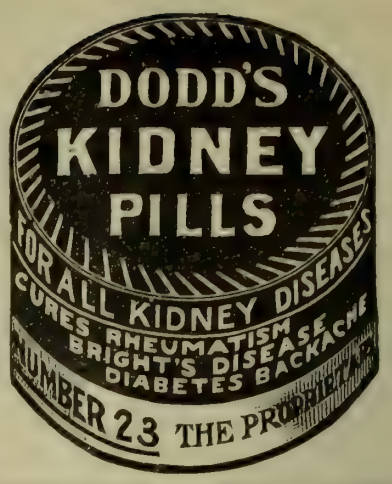
He brushed his sleeve across his eyes and looked again. Yes, it was Emily. She came up to him, with no sign of embarrassment.

"Well, Hiram, I thought you weren't coming. I've been here some time and will soon be starting back," she announced brightly. The other man passed on to take his place among the voters, but Hiram stood still in his tracks.

"Emily," he inquired solemnly, "how ever did you get out of that pantry?"

Emily looked startled. "The pantry!" she echoed. "Why, Hiram, what do you mean?"

He stared at her for a moment in silence.



"Somebody——" he began, then stopped. "Well, I locked the pantry," he finished, rather lamely.

His wife looked at him curiously. "I guess you've been dreaming, Hiram," she replied at last. "I locked the pantry door myself and laid the key on the kitchen table. But you don't look just right. Perhaps we ought to get home rather early. And with that she passed on.

Hiram pulled the key from his trousers pocket and stared at it.

"Dreaming, was I" he muttered. "Well, I guess not! But she's right about getting home early. I'll do that!"

As luck would have it the two teams in which the couple had gone to town pulled up at the Barton home at precisely the same time, and without stopping for further chat, with their neighbors, Hiram and his wife alighted and entered the house together.

Hiram hung up his coat and then sat down mechanically in the chair his wife pushed toward him.

Emily stepped behind his chair, then something slipped down over his shoulder, and looking down he found a pair of very handsome slippers upon his lap.

"What in the world,—" he began, when his wife's merry laugh interrupted him. "Happy birthday, Hiram!" she exclaimed, gaily.

A sudden light broke over Hiram's mind. "My birthday!" he ejaculated. "Why, of course it is! And I'd forgotten all about it. Emily," he queried suddenly, "is that why you went to town?"

"Of course it was," laughed Emily, with her hand on the kitchen door. "Just you wait and see—"

Her voice stopped suddenly as she entered the kitchen, and with a sudden recollection, Hiram arose and followed her. The key to the pantry was still in his pocket. He drew it out and then halted, facing his wife, and the two stood staring at each other.

Strange sounds were issuing from behind the closed pantry door—a long indrawn wheeze, like the breath of an asthmatic hog, and ending in a decided snore. The sound was repeated at regular intervals.

Hiram strode across the room, unlocked the pantry door and jerked it open, then stood gazing blankly at the scene within.

The room presented a littered and mussy appearance, in direct contrast to its usual tidy order, while seated with his back against the wall, with head thrown back and mouth wide open, was the much-tattered and badly soiled figure of a man.

There were crumbs in his grizzled beard; his pockets bulged, and even in sleep his features wore a blissful and well-fed grin.

Hiram's disgust was all contained in one sentence: "The same old tramp."

He stepped wrathfully forward, seized the intruder by his jacket collar and dragged him to his knees.

"Open the door, Emily," he ordered. His startled wife obeyed, and with a series of jerks and pushes the tramp was assisted from the house.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

His Face Was Covered With Pimples.

Pimples are not a serious trouble, but they are very unsightly.

Pimples are caused wholly by bad blood, and to get rid of them it is necessary to purify the blood of all its impurities.

Burdock Blood Bitters has made many remarkable cures; the pimples have all disappeared, and a bright, clean, complexion left behind.

Mr. Lennox D. Cooke, Indian Path, N.S., writes: "I am writing you a few lines to tell you what Burdock Blood Bitters has done for me. Last winter my face was covered with pimples. I tried different kinds of medicine, and all seemed to fail. I was one day to a friend's house, and there they advised me to use B.B.B., so I purchased two bottles, and before I had them taken I found I was getting better. I got two more, and when they were finished I was completely cured. I find it is a great blood purifier, and I recommend it to all."

Burdock Blood Bitters has been on the market for the past forty years, and is manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

After some brief but busy moments, Hiram returned to find his wife standing in the pantry door, holding in her hands a plate on which were the remains of a large and beautifully frosted cake, whose crumbled fragments still emitted a most appetizing odor.

"I'm very sorry, Hiram," she remarked demurely. "It was your birthday cake."

Hiram's face was already flushed from his exertions, yet it reddened perceptibly as his sheepish eyes met the quiet ones of his wife.

"Emily," he returned contritely. "I guess I've been pretty much of a fool."

And Emily's reply was a wise little smile.

When Re-Papering and Painting.

"It is not a light matter, the way we spend our time, our strength, our intelligence. The higher duties of womanhood, the higher evolution of humanity through her, of society through the household, demand a more healthful condition of household economics than this present shows. Our households are surcharged with waste matter, and our lives are spent in its arrangement and removal. Soul, mind and body are limited by the dust pan," says Helen Campbell.

At the time of house cleaning the wise woman weeds out the useless and worse than useless truck that litters the house, holds dust and causes needless work of dusting and arranging. It takes courage often to do away with things which are dear because of the giver, but one's time, strength and health are of much more moment than an assemblage of worthless bric-a-brac.

Bedrooms should be especially free from dust catching draperies and useless articles. When draperies are used they should be light and washable, and often washed.

For the housekeeper who has to economize (as a large majority of our housekeepers do, which makes life interesting) and who finds it necessary to repaper because the walls are faded, kalsomine may be used with good effect. It is very satisfactory even over cheap paper if it is firmly attached to the wall. If there are any loose portions they should be carefully pasted and dried before putting on the kalsomine. Put the kalsomine on the ceiling first, of course, to save spattering the side walls. A long stroke down the length of the paper makes a smoother finish than if put on with a side stroke. This is a saving of time as well as money and one need not tear up the house, as a careful worker will do no spattering. Cover a green paper with a green kalsomine and the walls will look fresh and new. Usually one coat is sufficient to cover; but two may make a better finish.

In this day of rugs, which are easily removed, the floors need to be kept in good condition. An economical way when using a large rug in the centre of the floor is to grain the floor a few feet around the edge, the only part which shows. This, if well done, will look nearly as well as a hard wood floor. Varnish the linoleum covered floor spring and fall to keep the colors bright and insure its wearing longer.

An easy way to kep the kitchen cupboards looking well is to paint the shelves spring and fall with a good white paint. If one cares to incur the expense, an enamel makes a fine hard finish which is easily wiped off. The shelves are then ready for the dishes without any paper or other covering. When the shelves get dusty, they are easily wiped off and the cupboard is always clear. A good method to use is to clean one shelf at a time when washing dishes, this will not be much of a burden and in this way they are always dustless and fresh looking.

In rooms that have only north light a paper with a good deal of yellow will add the desired sunlight color to the room. A paper should be tried in the room in which it is to be used, in both daylight and with artificial light. Some colors so absorb the light that a cheerful room at night is impossible. An oilcloth wall covering is good in the bathroom or the kitchen where a more expensive covering cannot be afforded. This can be wiped clean as easily as a dish.

To remove paint spatters which have dried on windows, scrape with a penny.

The ancient habit of tearing up the entire house so that there was no place to sit or have one's meals in comfort has happily passed away. Unless extensive repairing is to be done there is no need to make the family uncomfortable each cleaning season.

BRING BACK THE ROSES TO FADED CHEEKS

Anaemia and Chlorosis are caused by weak blood. Your doctor will tell you that nothing will bring back the rosy hues of health as quickly as

Wilson's INVALIDS' PORT

à la Quina du Pérou.

Because it is a combination of full-ripe Douro Grape Juice, retaining all the mineral salts, grape-sugar and fruit acids—with Cinchona Bark, the most powerful nerve tonic. A few weeks' use will revive lost ambition, awaken the lagging appetite and put new life into the nerve centres.

Big Bottle **Ask YOUR Doctor** **All Druggists**

H-2

"Where Times are Never Very Bad."

All things seem to work together for the good of the Maritime Provinces. Each year from some unexpected source comes the saving factor in the situation. To go back only as far as last year, our apple growers marketed their crop in the Old Country to remarkable advantage in spite of all the adverse factors in the situation, and this year Ontario is buying hay, potatoes and apples from us. We have a bumper crop of hay in the Maritime Provinces this year and the prospects now are that it will command a good price. Our potato crop has suffered to a considerable extent from rot, but with the high prices that promise to prevail the farmers stand to make a good thing out of what they have. The most itneresting point of all however, is the enquiry in the fruit belt of Ontario for our apples. We have on the whole a good sized crop, though in some parts the quality is not as good as we have had in some past years. However, our shippers are receiving orders from this unusual source and it will help to counteract the influence of any difficulties that may arise in connection with effecting shipments to the Old Country. Plainly it is going to be a good year for our farmers in spite of any doubt that may have arisen earlier in the season about the possibility of successfully marketing the increased output that was promised. It seems as if it is quite impossible (doesn't it) for times in the Maritime Provinces ever to be very bad.—Maritime Merchant.

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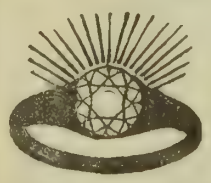

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716

The Woman's Thanks

There is so much strong men are thankful for—
A nation's progress or a slow strife's end;
And though I join my praise with theirs today
Grave things are these I scarce can comprehend
So vast are they;
And so apart, dear God, I pray thee take
My thanks for these thy little blessings' sake.

The little, common joys of every day,
My garden blowing in an April wind,
A linnet's greeting and the morning fall
Of happy sunshine through the open blind,
The poplars tall
That guard my threshhold, and the peace that falls
Like Sabbath stillness from my humble walls.

The little, simple joys that we forget
Until we lose them; for the lamp that lights
The pages of the books I love the best,
The hearth's red welcoming on winter nights,
The kindly jest
That moves within its circle, and the near
Companionship of those the heart holds dear.

The dear, accustomed joys we lightly take
Too much for granted sometimes, as a child
His father's gifts; and, so remembering, ...
For these my thanks, for these my treasures piled,
Each simple thing
Those wiser may forget, dear Father, take
My thanks for these thy little blessings' sake.
—Theodosia Garrison, in "Harper's Bazar."

School Lunches

I am not so far removed from the time that I carried a lunch box as not to have some idea about the matter, also, I have had ample opportunity to note the contents of the average child's dinnerpail.

Greater simplicity seems to me to be the desideratum—less cake and pie, and more of the substantials. A bit of meat or cheese or a hard-cooked egg is an addition to good bread and butter much coveted by most youngsters. And in the country, where fresh eggs can be had nearly the year around, they should hold a large place in the average child's lunch.

Eggs have been analyzed and found to contain a chemical known as lecithin—one egg having as much as 16 grains of this substance, hence just one egg eaten a day will give tone, vitality and activity to the brain and nerves. This will make man "50 per cent. efficient." Never be guilty of putting a soft-cooked egg into a lunch-pail. It is unhandy and untidy to eat. Enjoy these at the table, in the home. I believe many pupils do not do satisfactory school work because mentally starved. They eat enough, of course, but their diet is hit-and-miss, and their food is often lacking in the very things most needed to vitalize the mental forces.

Anyone that carries a lunch eats under great disadvantages. The food is cold. This of itself is a hindrance to digestion and takes much of the body heat. The eating is accomplished as speedily as possible, hence the mastication is neglected and this means more work for the stomach and affects the nerves.

Let those that put up the lunch see that it is given a neat and dainty appearance. Children appreciate it. Put a napkin in his pail. Occasionally let him find a handful of shelled nuts (walnuts, almonds, chestnuts) or fat raisins or currants, or a few bits of rock candy, taffy or a caramel stowed away in the corner of the box. It will prove a delightful "find" to the child. Encourage children to eat the dainty after the other food.

The old-fashioned nutcake or doughnut that used to be common in old families is an excellent cake for the lunch-box.

Then teach the children not to bolt their food. Reward them in some way, that will readily suggest itself to the judicious parent, for taking a long time to eat.—F. M. C.

Brighten the Kitchen

One wonders at the housekeeper who choose for their kitchen walls and woodwork a dingy grey or brown or some other dark, dull color that will not show the dirt. Are they better housekeepers because the dirt, which is surely there, does not show Would these same women wear black dresses and aprons when doing the cooking and feel that they were clean because they did not look soiled?

The kitchen should be the cleanest, sunniest and most cheerful room in the house. It is here the housekeeper spends most of her time, and it is here the food is prepared and often served.

It is not always possible to have the kitchen located so as to get the best light, but a dark room may be much improved by using the proper colors. In a Minnesota town the school kitchen had windows on the east sied only. Half of them were on a court and the others against a hill; but the use of a deep cream tint on the ceiling, a buff ond the walls, and woodwork of southern pine finished in the natural color and varnished, the effect of sunshine was given even on the dull, short days of the northern winter.

If there is much sunshine in the kitchen white or blue may be used; but on the north side of the house use buff or warm, yellowish tan. The increased cheerfulness and better spirits of the housekeeper will mean much to the entire family, and her work will not be increased by the new color scheme because a sunny, pleasant workshop lightens every task.—Mary L. Oberlin, Colorado Agricultural College, Fort Collins, Colorado.

Care of Sewing Machines

The care of a sewing machine is given far too little attention by the majority of women, and it seems a singular thing, too, for, like every thing else, it responds generously to the right treatment. Where it is run quite constantly it should be oiled every night, but where it is used, say, a little every day or so, once a week is enough to clean and oil it.

To overhaul the machine thoroughly. Set it in a good light, loosen the strap and loosen the plate. Remove the shuttle if it is a double thread machine and get every particle of dust and dirt out. A steel stiletto with a soft cloth wound around the point will help a good deal. A small size camel's hair paint brush is a valuable aid in this cleaning process. Clean the wheel wheel and all the lower part. Have two machine oil cans always, keeping one filled with good kerosene and the other with a standard machine oil. It is not economy to buy a cheap grade.

Use kerosene everywhere that oil is ordinarily put, then fasten the plate and put the strap in place and run the machine hard for a few minutes. Let it stand over night, and in the morning wipe every particle of kerosene off and oil thoroughly. By this is not meant deluging the parts, but using perhaps a couple of drops in each place and being sure that none is forgotten. Run the machine a little and let stand over night and in the morning run it soem more and wipe carefully. Most people use oil too freely, when they use it at all, with the result that it keeps coming out and getting on materials.

If there seems to be much more difficulty in regulating the tension, it will be better to have some one from the shop come out and fix it. If the shuttle tension is once well regulated it is never necessary to alter it, the regulating being done with the outside one.

Health is Wealth.

Issued by the Department of the Public Health, Nova Scotia

An eminent English statistician, Dr. Parr, from a study of the experience of the mutual insurance organizations in London, estimated that for every death recorded there is an amount of sickness which might be stated as sufficient to confine a person to bed for two years. An application of this estimate to Nova Scotia indicates that during the last statistical year the amount of sickness in the province would account for nearly 5,500,000 days of confinement to bed. Thus the enormous cost of sickness can be at once appreciated.

Considerably more than half the deaths occurred during the productive years of life, so that to the cost for medical attendance, nursing and medicines, we must add the loss of income entailed through approximately 3,000,000 days of illness.

It is generally conceded that there is no other factor so potent in the production of poverty, degeneracy and crime, as ill health.

It is well recognized that nothing is so essential to efficiency, success and the thorough enjoyment of life as good health.

As the struggle for place and even for existence becomes more intense, in the face of competition which is constantly growing keener, the need for sound health becomes steadily greater. No community need hope to make substantial advance unless it attends well to the measures necessary to maintain its people in a healthy, virile state. Any insanitary condition may be a menace to the health of the whole

GIRLS—Aren't you just longing to own this beautiful big doll's house, with dolly and all her handsome doll toys? Well if you are quick you can get them all without a cent of cost.

This is really the biggest and handsomest doll's house ever offered. It is so large and roomy that it will hold a whole family of dolls and when you put a candle inside at night and light it up, it looks just like a fairy palace. You will surely be delighted with it. We give you with it this big handsome Paris Beauty doll, dressed complete in the very newest fashion from hat to shoes. She has lovely curly hair, beautiful pearly teeth, sleeping eyes, and is fully jointed so that you can move her in any direction. Next we give you this lovely French Bisque Baby Doll and with her you get the cutest doll bed ever seen, all complete with mattress, spread and canopy, and as well, this handsome all metal baby doll carriage—handsome as can be with its bright parasol and silver bright metal finish. It's a dandy carriage for baby.

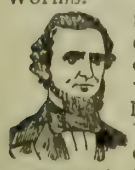
Girls be prompt and write today and besides all these beautiful and costly presents we will give you a lovely gold finished ring set with three handsome brilliants. Simply send your name and address today and you will receive by return of mail 30 lovely Regal Beauty Pin Sets, each set consisting of two handsomely engraved gold finished beauty pins on a nice card. We ask you to sell these among your friends at only 10c per set and you can easily do so because they sell at sight. Every lady wants two or three sets. Its no trouble at all. Return our $3.00 when you have sold the goods and we promptly send you the complete outfit—doll, doll house, baby doll, doll bed, carriage and ring just as represented.

Remember girls, no money in advance. We trust you. This is the chance of a life time. We arrange to stand payment of delivery charges. Write today to

THE REGAL MANUFACTURING CO. Dept. B. 41 TORONTO, ONT.

Worms Sap Children's Health

Mothers often wonder why their children are not rugged and hardy. In a vast number of cases the trouble is—Worms.


Trade Mark

Signs of worms are: Indigestion, variable appetite, craving for sweets, nausea, vomiting, swollen upper lip, sour stomach, offensive breath, hard and full belly, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever.

Dr. True's Elixir, the 60 years time-tired Family Laxative and Worm Expeller, will expel the worms and restore the vim and vigor to your child. Good for adults also. Discovered over 60 years ago. 35c, 50c and $1.00 at all dealers'. Advice free. Special treatment for tapeworms. Send for book.

Knowlton, Que. Dr. True

neighborhood, and should not be tolerated. Self interest demands that we should require of our neighbors and of everyone in our community strict attention to sanitation; that we should require clean air, clean water, clean food, clean homes and clean surroundings; that we should regulate our habits in accordance with well established rules; and that we should secure proper protection against the spread of communicable disease.

Children and Dicipline.

The following hints to teachers which appeared in the "Educational Review will be equally useful for parents.

Prevention of wrong-doing is better than punishment of the wrongdoer.

Exercise great care in taking a stand that you may have no occasion to retreat.

Fault finding is not calculated to cure a fault.

Distrust in the parent breeds deceit in the child.

A child properly employed gives no trouble.

Be firm.
Be kind. —
Be patient.
Be self-contained.

Be as perfect as you ask your children to be.

And above all, make no threats.

Preparing Next Years' Exhibits

Now is the time to begin preparing exhibits for next year's fair.

By carefully studying the exhibits that took first prize you can find a means to winning next year. Do not stop with merely a cursory glance (too often a cursery glance) at the winning booth. Likely the man invested more capital than you care to spend on an exhibit, but capital never equaled brains yet. Study out the reasons why you like the exhibit, and what attracts you to it.

"IN TIMES OF WAR PREPARE FOR PEACE"

Plant fruit trees now, so as to reap the harvest when peace is restored. We can supply choice Apple trees, Ornamental trees and Shrubs, Raspberry, Gooseberry, Currant and Strawberry plants of our own growing at lowest prices. Bees and Beekeepers Supplies. Satisfaction guaranteed. Write for prices.

E. L. COLPITTS,
PETITCODIAC, - N. B.

After you have discovered, in so far as possible, wherein lies his success, dont' go home and forget about it. Go over to the Farm Machinery tent and get one of those little memorandum books they give away, and write down what you think. Use the whole fair in getting suggestions what to do, and what is more important, what not to do.

Gather together carefully the things you can use again next year, listing them carefully in your "Exhibit Book." During the winter and early next season when an idea comes to you write it down. Then use your "Exhibit Book" as the basis for your arrangement of your exhibit next year.

Home Remedies.

Hot water and salt are very effective home remedies. A sudden sore throat will disappear rapidly if hot water cloths are wrapped around the neck, and a swallow of hot water, held in the mouth for a few seconds, will often relieve a sick headache. A nervous headache is relieved by applying hot water cloths to the soles of the feet and back of the neck. The patient should be kept quiet and allowed to sleep, if possible.

When dry heat and the hot water bottle fail to remove rheumatic twinges, wring flannel out of hot salt water and apply to the affected parts. If the ear is filled with warm water and then after allowing the water to run out, plugged with a little cotton that has been dipped in olive oil or glycerine, it will usually cure the most stubborn case.

The earache and toothache being the result of a cold, keep the patient in a comfortable position near a fire and allow him to sleep. In using hot applications, always remember to change them frequently, keeping them hot, for if allowed to become cold, they will do more harm than good.

Warm salt water held in the mouth will stop the flow of blood after a tooth has been drawn, and will often cure toothache. It is a good gargle for sore throat or hoarseness, and if drawn up into the nasal cavity will prevent the development of catarrh.

Tepid water and salt make a good emitic for one who has taken poison. Small doses of salt taken at inervals will relieve hemorrhage, and nose bleed may often be stopped by bathing the face and neck in cold salt water.

Always salt nuts well before giving them to the children to eat, as this makes them more palatable and digestible and prevents colic that it often caused by eating nuts. A half teaspoonful of salt wil relieve this colic, causing the nuts to assimilate with the other food and digest.

Bathing the feet in warm salt water and then rubbing them with dry salt will avert a cold after getting one's feet wet. A salt bath is a good and bracing tonic.

The Japanese use salt as a dentifrice and have very firm, white teeth. It hardens the gums and keeps them in a healthy condition. There are really no more simple or effective remedies than salt and water for many of the little ills that flesh is heir to.

Our Mentor.

Not weighty eruditions guide
  Our groping feet
Most perfectly where pathways hide
  For travel meet:
One mentor marvellously have we
  Through thickets wild:
One girt with God's authority:
  A little child.

—Louis M. Waterman, in Sunday school Times.

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Make your home more attractive, and protect it from fire with these beautiful, sanitary
"Metallic" Ceilings and Walls
They will out-last the building and are very inexpensive. They can be brightened from year to year with a little paint at a trifling cost. Made in innumerable beautiful designs suitable to all styles of rooms. Can be erected over old plaster as well as in new buildings. Write for catalogue.
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Gingerbread.—Home made gingerbread is always kept in some houses, especially where there are children. It is most nourishing and excellent for growing bodies. The ingredients are plain but good, consisting of mixed flour and fine oatmeal, with ginger to make it hot and strong, milk and eggs wherewith to mix the mass, sugar and treacle to sweeten it. It becomes a stimulant of a fine kind, is a very good laxative, on account of the treacle in it, a carminative, because this is the action of the ginger, a stomachic, a preventer of colds and a warder-off of chills. Butter is in it, or, in the plain sorts, lard, and so the confection becomes very good. In Engalnd, gingerbread, almost wholly compounded of oat-flour, lard, ginger, treacle, was the universal cake eaten on the fifth of November, which day was kept as a feast by Act of Parliament after the failure of the Gunpowder Plot. And to this day, though that feast is only honored by children, the parkin, as this gingerbread is called, appears in the shops. Parkin it was called, on account of the fireworks, mimic parks of artillery.—Food and Cookery.

Jacoba Johanna, a Holstein cow, bred by Lea & Clark, was again Sweepstakes female at Calgary.

Home-Made Insect Powder for the PoultryKeeper.

There are scores of so-called "poultry lice remedies" on the market. They are not only expensive, but no more effective than some of our simple home-made remedies.

A good home-made insect powder can be made by thoroughly mixing one-fourth pint cresol and three-fourths of a pint of gasoline. Add to this mixture gradually with stirring just enough plaster of paris to take up the liquid. For the above amount it will take about two and a half pounds of plaster of paris. Spread out thin on a paper until dry. Screen carefully and it is ready for use.

If strong crude carbolic acid is available it can be used instead of cresol. This powder can be boxed, put in a dry place and kept for a long period of time. To apply the powder, dust the birds thoroughly around the vent and in the fluff under the wings. The application should be followed by a second in four to six days to kill the lice or mites from the unhatched eggs or "nits" present at the first treatment.

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without [illegible] from anyone. My treatment cannot [illegible] sufferings; what we women know from experience, we know better than [illegible] and thousands have proved there is hope [illegible] for the hopeless in my method [illegible]. If you suffer from pain in the head, back, [illegible] bowels, feeling of weight and dragging and [illegible] sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment [illegible] free and postpaid, to prove to yourself that these ailments can be easily and surely [illegible] your own home, without the expense of hospital treatment, or the dangers of an [illegible]. Women everywhere are escaping the surgeon's knife by [illegible] my simple home treatment, and when you are cured, my sister, I shall only ask you to pass [illegible] to some other sufferer. My home treatment is for all—young or old. To Mothers of Daughters. I will explain a simple home treatment which speedily and [illegible] (chlorosis), irregularities, headaches, and insomnia in young women, and restores [illegible] to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you continue, it costs only a few cents a week to do so, and it [illegible] Is health worth asking for? Then accept my generous offer, write for the free treatment [illegible] to your needs, and I will send it in plain wrapper by return mail. To save time, you can write me this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS BOX 309 WINDSOR, ONT.

A Serious Question.

How Are Your Children's Adenoid's and Tonsils?

(Dr. Charles F. Campbell.)

Note.—This is an effort to instruct parents concerning the necessity of having their children's diseased adenoids and tonsils removed. This warning is necessary with probably seventy-five per cent of parents. The dangers of adenoids and enlarged tonsils are so great and lasting, they do so ruin a child's entire life, that a strong warning is not only forgivable, but greatly to be desired. Every mother who reads this will "sit up and think" and she will know how to detect these troubles; she will know the dangers, and she will act. And this "acting" is what is desired for the betterment of the coming generations.—Editor.

"The child is a perfect fool!" How many times have you heard this said of some unfortunate child, you mothers? Perhaps you have said it yourself. Perhaps you have overheard it said of your own child!

You have seen thin, pale, unfortunate youngsters, who went about as stupid as a log of wood, mouth open, eyes protruding and weak, teeth sticking out, chin retreating, vacant stare, talking thickly or lisping in rather guttural tones. You have seen such children who were bashful and shy, who ran away at the sight of strangers, who were timid, who did not seem to hear you when you spoke, who could not seem to follow what you meant when you did talk to them.

It is of such children that the expression, terrible in every aspect, is made "The child is a perfect fool!"

But, ninety-nine times out of a hundred, the mother of that child has been, or is, a perfect fool!

Not that the poor child inherited its stupidity and pitifully idiotic appearance. No, indeed, the child was quite normal, once. It was unfortunate enough to have a mother who was a "perfect fool." It seems about the harshest thing anyone could say of a loving mother, whose secret heart is breaking because her dear child is turning out so unlovely, so pitifully ugly and stupid, but one cannot say harsh things enough about such a mother, because it is all her fault—and, of course, her husband's fault, too.

Diseased adenoids and tonsils can make the child a fool, if he was not born defective.

Now, a child cannot go ahead and have his tonsils cut and his adenoids removed. What does he know of such things?

But the mother could have done so, should have done so.

Every parent who neglects to do this is criminally negligent!

"But how did I know my child had adenoids and enlarged tonsils|" is what many a mother has asked me, when I have spoken to her rather plainly concerning her neglect.

"Common intelligence should have told you something was wrong. You should have found out what it was. You should have thought of these things. You can read, hear, understand, and the world is full of information about such things today. Tonsils and adenoids are not new to you. You know what they are, you have heard what they mean. You merely put it off and off, until now your child will be a half dozen years getting back to normal again, and probably he will never be quite the same that he would have been if you had had him attended to when he was a little tot!"

That is the sort of plain talk I give, I do it purposely. I hope it will prevent further mistakes of that sort, and that it will enable mothers to teach their children what to do when they become parents.

This is not a scare. It is a plain, unvarnished statement **of fact.**

Diseased adenoids may not kill outright, nor enlarged tonsils, but almost better kill a child than bring him up to be stupid—literally a fool!

The enlarged tonsils mean that he will be susceptible to diphtheria, tonsilitis, and other throat troubles, a hundred times sooner than a normal child, and his chances of recovery when he has diphtheria and enlarged tonsils are not very good.

The swollen adenoids close the nasal breathing passage. The child cannot breathe through his nose, but must breathe through his mouth. He keeps his mouth open always. This impairs his hearing, it spoils his looks, it makes his face grow wrongly, it causes all sorts of germs (which should be stopped inside the nose by the fine hairs and the ever-wet mucous membrane) to go down the throat, get into the lunngs and into the blood, and, also the child is in great danger of tubercular and other similar troubles.

No, I cannot say that diseased adenoids and enlarged tonsils are fatal, but they are the biggest help to fatal diseases of anything I know about.

Even if there is no indication that your child has swollen adenoids, do not take the least chance; have your family physician examine the youngster. He can tell at a glance if the tonsils are too large, and he can easily tell if there are symptoms of diseased adenoids.

Fortunately, the symptoms of both are so plain that parents of average intelligence should be able to know when this trouble overtakes their children I believe at least sixty out of every hundred have diseased adenoids and enlarged tonsils before they are eight years old.

In such cases there is only one thing to do—have the tonsils and adenoids removed.

Do not shudder at the word "operation." It is a minor operation. Today a physician slips a small instrument into the child's mouth—"snip," and the tonsils are gone. Many young people have come to me and had them removed without an anaesthetic, although I do not approve of this, unless the heart action is weak. But do not regard it with the least horror. There is nothing more fatal about it than having a splinter removed. A bit of anaesthetic, a couple of minutes' work, a day when the child feels uncomfortable, and it is all over!

No one can then say of your child, "He is a perfect fool!"

The child will begin to breathe through his nose, he will learn to close his mouth and open his eyes, he will regain his impaired hearing, have a better appetite, and soon be back to normal condition.

That is why I insist that it is nothing short of criminal negligence to allow a child to go with diseased adenoids or with enlarged tonsils. No parent can estimate the danger of doing this. And no parent can overestimate the life-long advantage it will be to the child who is properly prepared physically to fight life's battles—given a clear head, a perfect breathing apparatus, and made as immune as possible from the dangers of contagion.

Remember, there is no half way method. Diseased adenoids and enlarged tonsils cannot be "cured." The only means is by the knife, but it is so simple, so easy, so harmless, that only a foolish (to put it very mildly) parent will neglect his duty.

Intelligent parents today do not want to take a dangerous chance with their children. If there is anything at all that can be done to assure them better health, stronger bodies, and less hours of pain, while going their destined journey through life, the modern parent will see that it is not left undone.

The first thing, then, is to know how to detect enlarged tonsils and diseased adenoids. If your child takes cold very easily, if every cold develops into a sore throat, if earache accompanies such colds, you may be pretty certain that his tonsils are enlarged. Do not guess at it. If any of these symptoms show up, have the child examined by a physician at once. Do not think that you can take a child into a strong light, insert a spoon in his mouth, and look down his throat and see the enlarged tonsils. You may see some inflamed places and you may look directly at the tonsils, you may even be clever enough to know you are looking at the tonsils, but how do you

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Everybody—young and old—loves the rich, delicious flavor of

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It is a daily treat—the perfect sweet. Just what the children should have on Bread—costs far less than butter or preserves. Delicious with Hot Biscuits, and Batter Cakes. Gives a new delight to Baked Apples, Blanc-Mange and Puddings. Makes the best Candy you ever tasted. 3

"LILY WHITE" is a pure white Corn Syrup, not as pronounced in flavor as "Crown Brand". *Your Grocer has both Brands, in 2, 5, 10 and 20 pound tins—or can easily get them for you.*

The Canada Starch Co. Limited, Montreal

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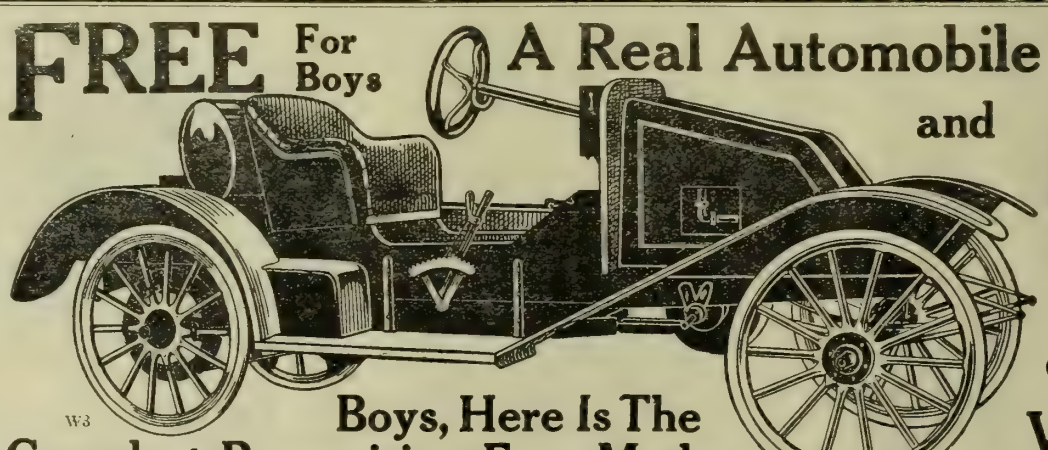

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YOU can have this real 5 horse-power automobile with an air cooled 4 cycle gasoline engine that can't be beat. This is the Canadian boy's cycle car and it's yours free, besides a crackerjack guaranteed watch in the bargain.

If you have ever wanted an automobile, now is your chance to get one for nothing. This car is just big enough for one person. It is built exactly like the big autos on a small scale. It has artillery wheels and solid rubber tires, steering gear and wheel, two kinds of brakes, starting crank, upholstered seat, tool box, tools, cone clutch. It will run 30 miles on one gallon of gasoline. This is the real thing for the real live boy, and besides the great auto we are going to give you a dandy guaranteed watch that any boy would be proud to own.

If you think you are a live boy and not afraid to run a real automobile, just send us your name and address. We want you to help us advertise and increase the demand for our new double-strength spearmint chewing gum, put up in big packages—and sells at 10c. a package. Our gum sells like wildfire because every purchaser gets a valuable certificate entitling the owner to receive a copy of the great Patriotic Picture, "The Story of a Brave Canadian Father," worth $2.50. Each picture is reproduced in its original magnificent colors and is 16x20 in size. It is the most stirring and Patriotic Picture painted on the war. We will send you post-paid and trust you with only **35 PACKAGES TO DISTRIBUTE AT 10c. A PACKAGE.** As soon as you have sold them return us $3.50. **YOU WILL RECEIVE IMMEDIATELY AS A REWARD** for your work the magnificent watch, and the automobile is yours too without selling another cent's worth of goods, just by sending us the names and addresses of eight boys who would like to have our fine premiums too and who will be our agents. **Send your name to-day to**

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Milburn's Laxa-Liver Pills are 25c per vial, 5 vials for $1.00, at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?
He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.
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That is one thing that should interest New Brunswick farmers in them.
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Send in 5 New Subscribers to the Maritime Farmer at 80c each, and get a beautiful piece of Cut Glass or Silverware.

Advertise in The Maritime Farmer and get Results.

know whether they are enlarged or normal?

Back where the palate hangs down are two thin upright folds of the lining membrane, arching down each side of the throat. These are the "pillars" which cover the swallowing muscles, and the little pink almond-shaped soft things bulging out between them are the tonsils. But you can remove the spoon and let your doctor decvide about the necessity of cutting them.

It is much easier to detect diseased adenoids. Look at your child's mouth when he is asleep or awake. Does he sleep with his mouth open? Does he stare off in his childish day dreams with his mouth open? If so—"adenoids!" Look at the child's nose. If it runs, if it is sore, if he snuffles a great deal, and if he has fever sores, he doubtless has swollen adenoids. If the youngster seems dull, if he stands and stares at you without apaprently understanding all you say, and if he breathes hard through his mouth, and puts his hands up to the side of his head frequently as though he felt a dull pain, you may be pretty sure he has sick adenoids. Don't guess, take him to the doctor!

If your child is normal, all his first teeth should be in when he is two years old. Begin to look for diseased adenoids and enlarged tonsils any time after that, and remember that "eternal vigilance is the price of safety." Then, if you or your physicians find them, have the operation performed. Better have both done at once; it will save time and trouble and worry, and ninety-nine times out of a hundred, a second operation.

Adenoids grow from the back part of the throat, where the throat and nose join; they are red, and shaped like little heads of cauliflower. Hanging from the back part of the nose, they stop it up and force dangerous mouth-breathing. When the child breathes through the mouth he takes in more dust and germs than it is possible to do through the nose. We have hairs and peculiar winding passages in our noses, to prevent this very thing.

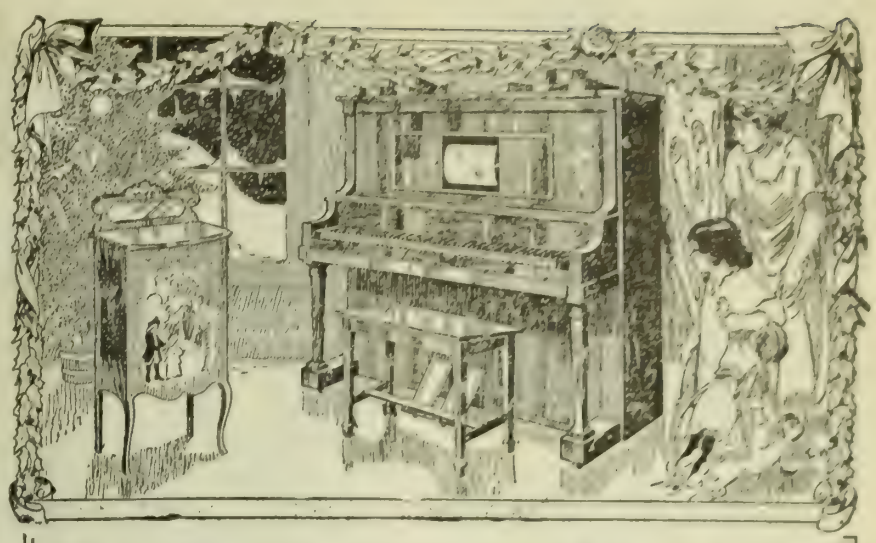
Even if your child does not seem to have diseased adenoids, if he breathes through his nose apparently quite normal, he may have the start of them. If he is rather dull in school, if he has frequent earaches, if his upper lip seems very short, it generally means swollen adenoids, especially if he draws his upper lip frequently, showing his upper teeth.

To be safe, have the child examined anyway. It is always best. Children with swollen adenoids and enlarged tonsils are always more susceptible to disease than normal children. If there is an epidemic of scarlet fever, or measles, or anything like that around, they are the ones who get it before normal children do. This is quite natural, since their little mouths are open to catch all those germs flying about the community.

Let me emphasize this again: Do not be alarmed at the thought of having adenoids or tonsils removed. It is a minor operation, not at all dangerous, and the recovery is rapid. The youngsters have one bad day of it afterward, and then they are playing about as happy as ever, with only a touch of what they may call "sore throat," but which heals rapidly. They really suffer far more with diseased adenoids and enlarged tonsils than they do from the operation while they are recovering, only they are used to the former, while the healing sensation is new.

Diseased adenoids and enlarged tonsils frequently have a tendency to bring on rheumatism and heart troubles. They hold poisonous germs, which may be carried by the blood to the heart, or to the joints, and thus cause the rheumatic pains. They prevent the good, sturdy growth of the child, give him a weak little face with a weak jaw, and, taken altogether, they are about the most undesirable things a child can have.

Fortunately, if taken in time, there will no harm result.



The Best Christmas Gift of All

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NEW SCALE WILLIAMS
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Send for beautiful booklet illustrating our most popular models. Choose your favorite design and we'll guarantee to have a beautiful piano in your home on Christmas eve.

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Laundry Notes

Stains which bother in the laundry are of three kinds, i.e., those caused by vegetable growth, those from actual chemical compounds, and those caused by a deposit of small, solid particles.

Mildew is perhaps the stain which puzzles the housekeeper the most. It is the most common type caused by vegetable growth. When this stain is examined under the microscope one can see a network of tiny tendrils which cannot be seen without the aid of the microscope. On the ends of some of these tendrils can be seen small cup-shaped organs which hold small seeds or spores, which scatter over the cloth and start new plants. This is the way the mildew stains spread all through a garment. These little tendrils will, if given time, find their way through many layers of the material.

Oxygen will destroy the mildew plant, but it will thrive in a damp, warm place. To remove mildew from a garment, first give it a thorough airing and then place in boiling water; the character of the stain is changed and it is now a chemical compound, for the mold has produced a dye. A bleaching process has to be resorted to now to remove the stain. Soak the garment in equal quantities of hot water and javelle water until the stain disappears; thoroughly rinse in three waters; then rinse in water to which a little ammonia has been added.

In most all processes of bleaching, an acid is formed which will weaken the fibres of the cloth, and, if very strong, will destroy them unless quickly neutralized by an alkali. Ammonia or washing soda solution are the best to use for this purpose.

Stop that Torment of Mind and Body!

Write Me!!

You discouraged women, sufferers of physical torture and distress of mind, you ladies staggering under the burden of never-ending doctors' bills and all to no purpose—write me!

I have passed through and conquered all that you are now enduring. From my own experience I can sympathize with you and realize your state as no doctor ever can. Because I have benefited and profited by the use of that wonderful "Orange Lily" treatment and have seen it perform the seemingly impossible for other sufferers, I want every ailing woman to get a free trial of this greatest remedy of all ages.

Take courage my sister! Relief is within your reach. You may prove the effectiveness of "Orange Lily" without spending one cent. Be assured your letter will be treated as sacredly confidential and receive a prompt and sympathetic reply. Address Mrs. Frances E. Currell, Windsor, Ont., without delay.

The Prince Edward Island Fields of Standing Grain Competition.

(Continued from Page 151)

South Queen's—Judge's Remarks

The crops of oats and wheat, on the whole were good; some were excellent, and a few were rather poor. In some cases lack of fertility was much in evidence. Those crops from selected seed, where soil conditions were tolerable were more vigorous, looked healthier and were more uniform than many crops throughout, where no particular care was taken. Good cultivation gave large results in every case and an absence of couch grass invariably was noted.

The growing of barley is evidently in its infancy, but two of the fields were really fine.

The weed nuisance is becoming a very grave question. Sow Thistle, Couch grass, Canadian thistle and many others are gradually becoming permanently fixed on many farms. On a few these were kept down by careful cultivation and hand pulling. The roadsides and fencerows are generally neglected and prove an excellent habitat for all classes of noxious weeds. A few days spent every year on every farm would soon result in a clean province. Fields of grain are far more attractive on a clean, tidy well kept farm.

Where the seed oats were treated for smut, very little and in some fields none was found, but where neglected the loss has been quite heavy.

Very little rust was noted in any fields, and only in one or two instances, and then only slightly, did the fly effect the wheat.

South King's—Judge's Remarks

In this district the crops are good, the wheat being especially strong growth, while the oats though more uneven on account of the cold wet weather is yet well filled and should turn out a large yield. Smut is much more prevalent than last year in both wheat and oats, some wheatfields being very bad with bunt while loose smut in oats will greatly decrease the yield. Where any care has been taken in seed treatment very little loss will occur, but where no teratment was given the losses will be great in nearly all cases. Insects have also done considerable damage, joint-worm being very bad, while some fields have been attacked by weevil. The heavy wind and rain storms have also created havoc, the grain being badly lodged and tangled up.

West King's—Judge's Remarks

The same remarks might apply here as in South Kings. Bunt and loose smut are very common, while joint worm, weevil and in some cases Hessian Fly have destroyed considerable of the crop. The crops were better than last year in this section and only for the severe storms which broke them down coupled with the infection from smut which will greatly lower the yield the scores would be much higher. Sow thistle and Canada thistle were very common and are proving a grave source of annoyance to the farmers. Nettle, Vetch and Wild Buckwheat are also very prevalent. The majority of the fields in both districts are infected with the above weeds.

East King's—Judge's Remarks.

There was a strong competition in wheat and owing to this many fine fields did not get a place in the awards.

A very large percentage of entries in Wheat were White Russian. Old Island Black seemed to be the favorite variety of oats. Many fields were badly lodged by the wind storm of Sept. 4.

The Average Hog in Farm Economy.

(Continued from Page 155)

intrinsic productive capacity for the direct satisfaction of human wants. The farmer himself is the first one to be satisfied and in the future farm enterprises will be more self-contained than in the past. We will have to cut down on the canned goods and hunt a favorable exposure for corn and tomatoes in the kitchen garden plot. We will find more use for skim milk, whey and small potatoes. We will use our wheat straw to bed the little pigs and the tailings to keep the shoats going. We will supplement our grain growing with fodder growing as alfalfa, peas, rye, rape, and grain mixtures to help the land, increase our livestock production and put the streaks in the bacon. This is both home-making and money-making. It is into a scheme like this that the brood sow fits well or perhaps a couple or half a dozen as judgment and experience poitn. The days of plunging, bucking and changing ends quick are over.—By I. McCuig.

Figuring Profits and Apple Orchards.

(Continued from Page 159)

$1.31 a barrel remains for firsts and seconds. Multiplying by 79, the number of barrels to the acre gives $103.49 as the profit an acre for firsts and seconds. Substracting 72 from 93 cents gives 21 cents as the difference between average cost of production and average selling price of culls. Multiplying 37.6, the number of barrels of culls an acre, by 21, gives a loss of $7.89 an acre on the culls, leaving the average net profit an acre in this orchard for the past 10 years, $95.60. Add to this the $25 interest on the investment and we have $120.60 net, or 24.12 per cent on $500, as the annual 10-year dividend from this orchard.—N. E. Homestead.

Transmission of Tuberculosis

In the transmission of tuberculosis from cattle to man, the danger has been so exaggerated as to lead one to believe that no one could escape the disease.

Milk for the cities is being pasteurized, and the butter sold in our large cities is made from pasteurized cream, so that if the danger would be as great as has been exaggerated, there would be no danger of transmitting the disease. An eminent bacteriologist writes that, "So far as I am aware, there is on case on record where it has been conclusively proved that butter infected with tubercle bacilli has been the means of producing the disease in the human."

Another eminent bacteriologist says: "That while it is possible for pathogenic bacteria to maintain their viability in butter for a considerable period of time ,so far as I know, no case of the transmission of disease of any kind through butter has been reported. My personal opinion is that the danger from butter is very slight on account of the very small number of pathogenic bacteria which would be likely to occur in butter even if made from unpasteurized cream and the comparatively small amount of butter which is consumed."

In fact, never in the history of the country has there been such good butter, milk, cream and cheese sold as there is today, and no products are as healthful, nutritious, and cheap as are those from the dairy cow.

THE JOYS AND WOES OF THE SLEEPING CAR CONDUCTOR

(By A. H. Lindsay)

My definition of the average sleeping car conductor, if asked for would read soemthing after this fashion:

"A gentleman of quick judgment; a diplomat, suave and obliging, polite and attentive; with a very large capacity for carrying other people's burdens, and for bearing the brunt of other people's blunders, with a keen perception for the rectifying of the same."

Of course, this definition would not fit every conductor. It would be too elaborate a cloak for some, and not sufficiently large for others. It is intended to fit those who are the best known on the lines of the Canadian Government Railways, for I can state without fear of contradiction that experienced travellers regard the latter as the most courteous and obliging in the business.

All railway men have their troubles. We often have to diverge from the smooth paths that are bordered with fragrant flowers and walk over the stony places. We have men in each branch of the service who imagine their own particular cares are greater than those of anyone else. It is all in the point of view. I have seen officials in a ferment over something that appeared to me to be altogether unworthy of such a display of wrathful energy; while I daresay I have fumed and used censored language over things equally trivial to others. We all do. It is a weak spot in human nature.

So having all this in mind, it is no wonder that I feel inclined to hand a bouquet to our sleeping car conductors who are the intermediaries between the railway and the most particular class of travellers. The problems they are daily confronted with are often sufficient to make most of us who think we have worries seek refuge in the Japanese relief of hari-kari. Great as is the care exercised in the sale of seat reservations, mistakes will happen. If thehy are not made by the railway they are made by the passenger, although the latter seldom admits it. It is a hard situation to overcome on a crowded train when two persons claim the same berth or seat, and both hold tickets entitling them to it. It puts it up to the conductor to do some rapid thinking and re-arrange his space so that everyone will be satisfed It is indeed a time for diplomacy and concessions, the liability for the error being determined subsequently. It may be that some innocent party whom the conductor knows, may have to come to the rescue by giving up a comfortable "lower" to one of the irate ones. This has been my own experience more than once, and I might say that beyond its being the duty of any railway man, there are few who wouldn't do it just to take the awful strain from the conductor's feverish mind.

The conductor's quick judgment is frequently shown. Not long ago on the Maritime Express leaving Montreal, an elderly lady wanted a seat on the chair car that goes as far as Mont Joli. There were chairs available, but the conductor noticed that her ticket read to Metis Beach. "Why are you going by this train"? he asked. "You will have to remain at Mont Joli over night, and you could hake a through connection by taking the Ocean Limited this evening." The old lady fretfully replied that she had been direct-

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ed to go by the morning train, while the conductor explained to her how much more comfortable it would be if she took the "Ocean" that evening. "Now, you get off at St. Lambert," he said, "and take a car back to Montreal, and get a berth on the 'Ocean' tonight. Your baggage will be all right." The lady followed his advice and no doubt was well pleased eventually. This was a case of looking after a passenger's welfare, which showed that he had clearly the interests of the railway in view.

On the same train the same conductor encountered a passenger whose berth ticket was dated for the train on the following day. The passenger was going a day ahead of his reservation and it was hard for the conductor to convince him that it made any difference. There was not much vacant space and the conductor had to do some wiring in order to get the matter arranged satisfactorily. For none of the mistak s was he responsible; but being present in the flesh he was obliged to be the target for the inevitable indignation and criticism, as indeed he often is for many things ov r which he has not the slightest control.

The conductors on the through sleeper between Halifax and Boston certainly have their troubles at the commencement of the season, especially on the run out of Boston. Here, again, mistakes sometimes happen in assigning space, and when this occurs passengers for points east of St. John find themselves on the St. John car, while passengers for McAdam Junction and St. John fill up the lower berths of the through Halifax car. This is apt to be the cause of angry comment on the part of through passengers who find they have to transfer, when such transfer might have been avoided. The conductor of course is not to blame; but, as usual, he has to bear it all.

These are only a few of the "trifling worries" of the sleeping car man. He has to deal with all kinds of domestic problems en route, as well as to see that the conventions are strictly observed. The difference of opinion regarding the ventilation of a car are at times sufficient to make the angels weep. Some like it hot; some like it cold; some like the atmosphere nine days old. The aggressive healthy young person in one section wants the window open, while the dear old gentleman in the next seat cannot endure such a draught. Some retire early and then demand that all the car lights be extinguished, while others prefer to remain up and converse. Of course the conductor and his porter are expected to instantly comp y with every demand and it is really marvellous how they manage to satisfy so many. Diplomats? Yes.

The story is told of a sportsman who wanted to get off the Ocean Limited at a small station in Quebec where he was to get some fishing. He arranged with the porter of the sleeping car to arouse him in good time, and took care to instruct him that no matter how much he objected to being awakened at such an ear'y hour, he was to get him up and see to it personally that he was put off the train. The porter promised he would, and the sportsman retired to obtain a few hours' slumber. It was well on in the morning when he awoke, to find that he had been carried past his station. Mad clear through, he sought the offending porter, who gasped with dismay when he caught sight of him. "Here! You rascal," the passenger exclaimed, "didn't I tell you to put me off the train at ———?" "My soul, boss," exclaimed the porter, "I declare to goodness I done thought I did put you off." "Well, you didn't," said the pasenger. "You didn't come near me at all. "Well, boss,' 'said the confused porter, "if I didn't put you off, who was the pasenger I did put off? He sure kicked some, but I landed him on the platform. Yes, Sah."

For Afternoon Tea
as well as at meal-time, KING COLE is equally appreciated.
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Its choice refreshing flavor seems just what is needed. Try the "Gold Label" grade.
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Annual Meetiug of Sussex and Studholm Agricultural Society.

The annual meeting of The Sussex and Studholm Agricultural Society was held in the live stock judging pavilion of the Agricultural School, Sussex, on Wednesday, December 1, at 2:30 p.m., J. T. Prescott, the president, ccupied the chair. Despite the inclement weather and the bad roads there was a representative gathering of old members as well as of over half a dozen non-members, who had heard of the good work the society is accomplishing for the farmers of the two parishes and who wished to join the ranks and share the benefits.

The president referred to the very successful operations conducted during the year. The minutes of the last annual meeting and directors' meetings since held were read by the secretary, all of which were approved as read.

The Seed Fair held under the auspices of the society last March, had been the most successful in ten years. Over $120.00 was paid in cash prizes. The Seed Fair is open to any farmer in the county of Kings and the directors at Sussex welcome exhibitors from districts outside the limits of their own parishes. The first stormy day would be an opportune time to get a few bags of grain in readiness for the next seed fair. Parties not members of the Sussex and Studholm society wishing to make entries may forward their names to the secretary and a copy of the new prize list will be forwarded to them as soon as it is ready. The fair will be held in 1916 some day in March. Date will be announced later.

The field crops competition of 1915 was one of the best in the history of Kings county. Competition was very keen and the sum of $360.00 will be paid as prizes some time this month. The competition is open to farmers in the County of Kings and the directors would welcome more entries from other sections of the county. There will be a competition in 1916. Prepare to sow good seeds, wheat, oats, barley and buckwheat. See that you get the very best turnip seed available. Prepare your soil as thoroughly as you know how and then make your entries. The judges will visit you in good season and if you do not win a prize you will be told why and it may be that you can apply a remedy that will get you in good form for winning in 1917.

The lime grinding operations have proved very satisfactory. The ground lime was sold to the farmers at $2.10 per ton.

Members who sold their wool co-operatively realized the following prices: No. 1 tub washed, 45 cents per lb; unwashed, 37, 35, 33 and 31 per lb. according to grade. We understand these were the highest prices realized in the Maritime Provinces or Quebec. How much did you get for your wool? Enough said. Join the society, sell co-operatively and get the highest market prices. The treasurer's and auditor's statements showed a balance of over $160.00.

The following officers were elected for the ensuing year:

President—J. T. Prescott, re-elected.

Vice-president—J. Titus Barnes.

Directors—Hon. J. A. Murray, M.L.A.; Col. H. M. Campbell, F. Leslie Walker, W. F. Mosher, H. R. McMonagle, W. H. Venning, H. B. Parlee, E. O. McIntyre, J. Frank Roach, A. D. Freeze, Thos. Bell, S. C. McCully, Walter Stapleford.

The secretary gave notive of motion that at the next annual meeting he would move a motion to change the date of annual meeting from December 1 to November 1.

Last years committees were re-appointed.

Delegates to the annual meeting of the New Brunswick Agricultural Societies United: J. Titus Barnes and F. Leslie Walker.

Substitutes—Walter Stapleford and H. B. Parlee.

Fertilizers will be purchased through the New Brunswick Agricultural Societies United.

At the close of the meeting Mr. Jenning of the Live Stock Division, Ottawa, met the wool growers and gave an itneresting talk on the care and marketing of wool. H. B. Parlee, was elected president of the local wool growers centre, which will be conducted under the auspices of the Agricultural Society. A committee of three was appoitned to work with the president and secretary as an advisory board on wool sales.

The new board of directors met and re-appointed M. A. MacLeod secretary-treasurer. The question of a Kings county exhibition, to be held in Sussex, was discussed. The Minister of Agriculture was present and pledged his support. He spoke very favorably of what exhibitions are accomplishing in communities where the rural and urban residents work hand in hand to make their fairs a success.

Hon. J. A. Murray, J. T. Prescott and M. A. MacLeod were appointed a committee to talk the matter over with the Sussex Board of Trade.

Dressing for Pruning Wounds.

Fruit growers have long used paints, tars, waxes and other substances as coverings for wounds of trees. Curiously enough comparative tests of the many compositions in use seem not to have been made to ascertain the value of these dressings. Tree pruners seem to have taken it for granted that some covering was necessary for large wounds, at least, and have applied the most suitable material at hand.

The New York station has sought to answer the question, What is the best dressing for a tree wound? Also, Is a dressing necessary? The station concludes from tests made that undressed pruning wounds have healed more readily than those whose surfaces have been protected. Shellac seemed the first season to exert a stimulating influence upon the wounds, but the second season this effect disappears. Of all the materials used, shellac was the least injurious. It, however, does not adhere well to wounded surfaces.

The station advises that avenarius carbolineum and yellow ochre should never be used, since they cause much injury to the tree. Coal tar also is injurious. White lead and white zinc, while causing some injury at time of application, are not generally the cause of permanent trouble. The station believes that peach tree wounds should never be treated with any substance. It infers that this is true of wounds on trees of all stone frluits. The most far-reaching conclusion of the station is, that it is not worth while to treat wounds, large or small, of tree fruits with any of the substances in common use. In case it is thought best to cover large wounds white lead is undoubtedly the best dressing to use.

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FURS

Getting Rid of Thistles.

After sending down its roots for a few inches the thistle then sends out a number of lateral shoots or roots. To be successful in killing thistles they must be cut off above the branching set of roots, either by light ploughing, or by a cultivator with broad shares, so that no thistles can escape when once the field is gone over. Some thistle roots penetrate very deeply, and it would not be an easy matter to get to the bottom. Thistle roots have been found 12 inches down in hard clay. This need not deter anyone when the main secret of killing them is known, and that is to keep the thistles cut for one single summer either by light ploughing or by any other means, and not let them at any time get more than two inches or three inches high. Some hold the mistaken idea that the best ttime to kill thistles is when they are in full bloom. If thistles are allowed to grow until they get in full bloom, killing for that season is out of the question. The root of the thistle is something like that of the potato, in that each is composed principally of starch. By the time potatoes get in full bloom there will be young potatoes formed, and if these were taken up and preserved from frost, potatoes could be grown from them next season. The very same can be said of the thistle. While the stalk is growing it will be storing away starch in its root like the potato, and by the time it is in full bloom it will have stored away sufficient to live on for another season; but, on the other hand, if it is cut every time it appears above ground, it would be deprived of its breathing power, and death would be the result. The leaves of a thistle are just as important to sustain life as are the lungs of an animal. An animal breathes through its lungs, and a thistle breathes through its leaves; so no more could a thistle live without leaves than an animal could without lungs. The main thing to be observed is to cut the thistles before they get more than two inches or three inches above the ground. Use any kind of implement that will suit the varied conditions. In meadow or grain fields the spud should be used, and for a root crop the horse and hand hoe; but if the thistles are very numerous and a summer fallow is resorted to as a means of cleaning the land, then the plough or cultivator with wide shares will be a very suitable implement. Much can be done towards reducing thistles by growing a thick crop or rape. This, grown thick, prevents the thistles from having the full chance to develop, and will consequently reduce them very much. Plowing the stubbles with a shallow furrow immediately after harvest, and again later in the autumn, will reduce them considerably and will destroy all seedlings.—T.

The Value of Farm Yard Manure.

According to recent statistics, there are in Canada in round numbers, 3,000,000 horses, 6,000,000 cattle, 3,500,000 hogs, and 2,000,000 sheep. Experiments indicate that the approximate value of the fertilizing constituents of the manure, both solid and liquid, produced by each horse would be $27, by each head of cattle $20, by each hog $8, and by each sheep $2. This would make the total value of the manure produced in one year by the different classes of farm animals in Canada amount to $233,000,000. The importance of this by-product of the farm may be better realized if we compare it with some of the other principal products of Canadian industries. The following table shows the value of some of the leading products:

Total wheat crop, 1914	$196,000,000
Total oats crop, 1914	151,000,000
Total forest products, 1911.	180,000,000
Total mineral products, 1913	145,000,000
Farmyard manure, (average 5 years)	233,000,000

The figures given in the above table are for the years in which the value of each product mentioned reached the highest point on record, while the figures for the manure represent the average annual production for the past five years.

Assuming that one-third of the value of manure is annually lost by present methods of management, and this is undoubtedly a conservative estimate, the loss from this source in Canada would be about $78,000,000. Surely the farmer can not afford to throw away a sum of money that would more than pay his taxes. But that is just what many are doing. Recent investigations by the Commission of Conservation show that 90 per cent of the two hundred Ontario farmers personally visited by the Commission in 1914, exercise no special care to prevent waste. The natural manure is a part of the raw material for farm crops, and, as such should receive the same attention and care to prevent loss and waste as is given the raw material in any manufacturing plant.

A fact worth knowing and remembering by the farmer is that the losses caused by leaching or super-heating represent the most readily available portion of the nitrogen and potash in the manure, which is, consequently, worth more than that left in the manure heap.

It is hard to persuade the farmer to abandon time-honored customs, such as piling the manure under the eaves or on the hillside, but surely in this days of wider knowledge and of more intelligent farming we should refrain from waste.—F. C. N.

Filling the Silo.

A great deal of attention has been given to the construction, cost, and utility of the silo, says a writer in Hoard's Dairyman. It has been a comparatively new thing in parts of the East and for that reason these points have received special prominence. The man who has a silo is naturally confronted with the question of when to fill it.

Putting up silage at the wrong time has done more to make this kind of feed unprofitable than anything else. There is a strong temptation to put the corn in too green. It looks good, the cattle like it, and it is very heavy when the ears are in a soft condition. The inexperienced person naturally thinks it will come out of the silo as good as it went in. The facts of the case are entirely different. If corn is put in green it produces a sour, acid feed which is disliked by the stock at first and has an undesirable effect upon the digestive organs.

Corn that is in the right stage for cutting and shocking is in the right stage for the silo, generally speaking The leaves will be fully mature but the stalks and leaves will be still green. This kind of corn produces the largest amount of feed while the immature ears in the unripe silage cause a loss in feeding value of this part of the crop. When the kernels are glazed and hard they have practically as much food value as when the corn is

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No matter where you live or what you or your family want in Furs, or Fur garments, you can buy cheaper and better by dealing direct with us.

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This season furs are lower in price than ever before, owing largely to most of the European markets being closed on account of the war, but the stock of Raw Furs in America now is so low, that prices are stiffening up, and it looks to us as if they will advance steadily from now on. You should buy your furs this season *without fail*. Remember our Fur Style Book prices mean goods *delivered to you, as*

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No. 112 Muskrat Coat $34.50

No. 113 Muff to Match $5.50

Black Wolf Set $12.75

No. 225 Muff $6.50

No. 224 Stole $6.25

MUSKRAT COAT

112.—This MUSKRAT COAT is 60 inches long, made from evenly matched Muskrat skins in this popular style. This coat is very special value, well made in every way. Lined throughout with good quality brown satin. Deep shawl collar and cuffs, fastens with large crochet buttons and silk loops. Sizes 32 to 42 bust. .....Price $34.50

Same coat 45 inches long .....Price $42.00

113.—MUSKRAT MUFF to match above coat, in large pillow shape, silk lined, down bed and wrist cord.....Price $5.00

BLACK WOLF SET

This is a beautiful set made from long haired—good quality—whole skins. The stole is cut extra deep and wide over shoulder and back—giving good protection against cold—is trimmed with head and tail over shoulders and tails at each end. Lined with good quality satin and warmly interlined.

The muff is made in the large classy pillow style, trimmed with head, tail and paw: and mounted on good down bed giving great warmth and comfort—lined with good satin—with wrist cord.

No. 224, Stole....$6.25 No. 225, Muff....$6.50

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dried up enough to put it in the crib.

In Dry Weather.

If the weather is dry and hot, the corn will ripen quickly and the stalks and leaves will become dry and hard within a day of two. In such a season the corn should be cut a little before the ears are thoroughly matured. If the corn is allowed to get too ripe the stalks become woody, the sap is dried out, and the silage does not pack readily in the silo. However, it is better to have the silage cut dry than too green. The majority of the machines at the present time are provided with facilities for wetting the stalks as they go into the carrier. A small stream of water is turned into the blower and the fanning mixes this thoroughly with the shredded corn. The water has a tenednoy to soften the woody fibres and make the silage pack better. As the silo is being filled more water will be needed at the top than at the bottom because the weight of the column of silage packs that which is in the bottom thoroughly. If the corn is not well packed, air spaces appear and decay takes place, causing more or less loss.

In ordinary seasons the period for filling the silo lasts but a few days after the corn begins to ripen. It turns very quickly and must be handled at once if it is to be saved in the best condition. Frost may come before the corn is cut. In that case little damage will be done if the cutting begins immediately after the frosts. If it is not possible to fill the silo at once, cut the corn and let it lie upon the ground. It may remain in this condition for a week or so without much harm. If you must fill the silo before the corn is ripe, cut the corn and allow it to lie upon the ground in single bundles. In this way, the stalks will wilt and be in better shape for the silo. After one has had a little experience, the question of filling the silo is not difficult to solve. We learn by trying, here as in other things.

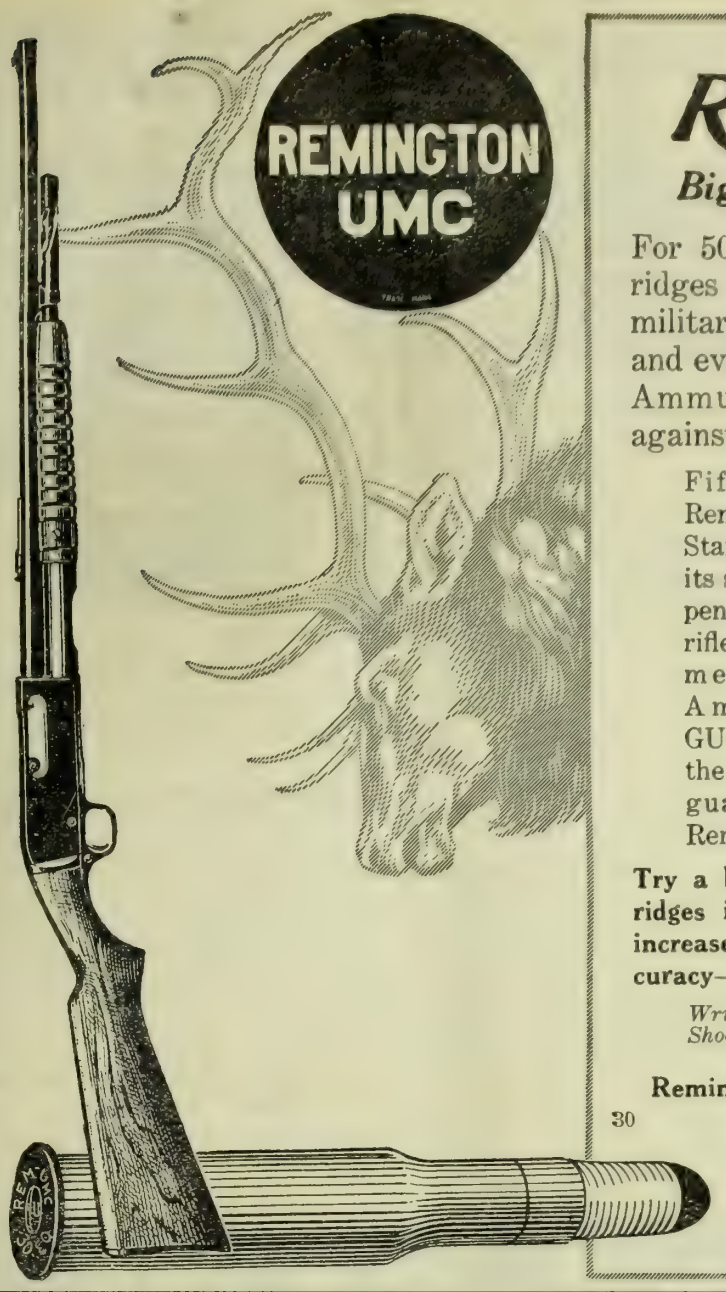
The Crew

The methods employed by the different farmers in filling their silos vary greatly, no two being exactly alike. This is occasioned largely by scarcity of help or teams and by the kind of machinery used. In this section the most common practice is to have one man with three horses on a corn harvester cutting corn in the field; two men to load the wagons in the field; three or four men with teams, depending on the distance from the field to the silo, to haul the corn to the cutter; one man to run the engine, when steam is used for power, and occasionally when gasoline engines are used; one man to feed the cutter, and one man in the silo to spread and tramp the silage. Each teamster pitches off his own load. This makes a crew of eight or nine men.

I find that on my farm I can cut an acre of corn yielding twelve to fifteen tons and put it in the silo for seven dollars or about fifty cents per ton. The same acre of corn would have one hundred bushels of ears that would cost me six dollars for husking alone, which with the cost of cutting, shocking, shredding and grinding would cost me double what it does to put the same crop into the silo. It is usually estimated that it costs seventy cents to one dollar per ton to put corn into the silo, but I know that myself and neighbors put it in for fifty to sixty cents per ton.

The World's Record for Butter-Fat Production Broken.

Malcolm H. Gardner, superintendent Advanced Registry, Holstein-Freisian Association, writes on November 9, 1915: "I am very pleased to be able to announce that the Holstein-Friesian cow Duchess Skylark Ormsby 124514 has broken all records for fat production, not only Holstein-Friesian, but those of all other breeds, by producing in 365 consecutive days 27,761.7 lbs. milk containing 1,205.09 lbs. fat. She freshened at the age of 5 years, 3 days. Her sire is Sir Ormsby Skylark 47010; her dam is Oakhurst Duchess Clothilde 106988. She was bred by A. B. Young, Buffalo Centre, N.Y., and is now owned by John B. Irwin Minneapolis Agricultural College and thirteen different supervisors were employed in its conduct, the test running very evenly month by month from start to finish. This remarkable production gives this great Holstein-Friesian cow place above all other cows in the world and makes her the world's new dairy queen."



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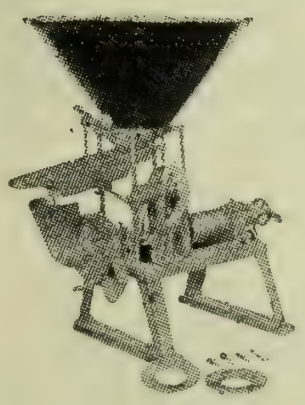
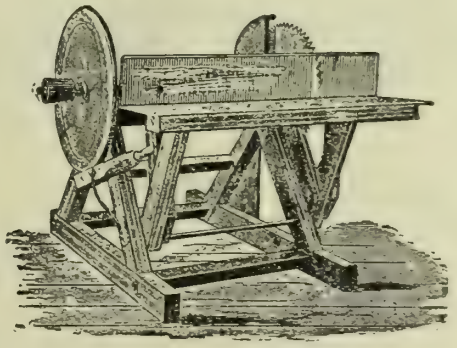


Grain Grinder



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More **Sussex Little Giant Threshers** sold this year than any previous year, and still they go. We have a few of each size still on hand and can make prompt shipment. Also have on hand, two machines, slightly used, which will be sold at a bargain to clear, guaranteed, in good repair.

Don't buy without getting our prices, we can save you money.

Our line of Wood Cutters, Feed Boilers, Hay Presses, Grain Grinders, Root Pulpers, Plow Castings, etc., is complete. Ask for our Catalogue. It will pay you.

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Potatoes at a Premium.

Potatoes have already reached a high figure compared with the low prices of last year, and chances are that quotations will go still higher. In Ontario, the usual acreage was planted last spring, and at the opening of the marketing season prices promised to be low. Since then rot has greatly reduced the crop. Reports now being received from both east and west indicate a greatly reduced crop in those sections. The United States crop also is short, and it was probably this shortage that hastened the removal of the embargo on Canadian potatoes.

From present indications we would not be surprised if farmers would realize more from this year's short crop than they did from last year's long one. It will be a great potato crop for the man who sprayed carefully, as in spite of the rain, good crops and clean tubers have been harvested from the majority of well-sprayed fields. The man who sprays will also have an advantage in that he can store his potatoes with a greater assurance that they will not rot in his cellar.

Applied to the Maine Meeting.

In the course of an address at the annual meeting of the Maine pomological society at Portland recently, Prof. Hendricks told the fruit growers that some orchards are inclined to do too much pruning and spraying. "A tree properly started should not be pruned a great deal until after it comes into bearing. Severe pruning throws a tree out of balance and encourages growth of water sprouts which should be avoided. I think that two good sprayings for codling moth and apple scab are sufficient. Of course, if San Jose scale is present, a dormant spray must be given in addition. Several spraying may give a little nicer fruit, but in commercial growing today, every item of cost must be scrutinized and expenses reduced where returns do not offset the extra outlay. On strong soils our New York growers find that trees set 40x40 feet are too close together. The popular distance now is 50x50 feet with fillers on strong bearing soils.

Quarantine as to Poultry From U. S.

Since the outbreak of foot and mouth disease in the U. S., quarantine regulations have covered practically all classes of animals, but, bit by bit, these restrictions have been amended or relaxed. The latest ruling refers to poultry, providing as follows:

"Pure bred poultry for breeding or exhibition is permitted to enter Canada when accompanied by the affidavit of the owner that it has come from an establishment not included in a closed area under federal quarantine.

"Canadian exhibitors will be permitted to return their poultry to Canada after exhibiting at United States shows, providing the show is not held in a closed area under federal quarantine."

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The Trappers Catch Brought the First Foreign Wealth to America.

Millions of dollars will change hands between the trappers and dealers in raw furs during the coming season. It is indeed wonderful to contemplate, when one thinks of the thousands upon thousands of fur-bearing animals killed every year throughout North America, and still the supply dos not seem to be withering. Many people are of the opinion that the fur industry is becoming extinct, due to the fact that the animals are being killed off in many parts of the country. This is not the case, in fact, it is just the opposite of conditions as they exist. The demand of Fashion, the competition of the large circular houses an dthe general utility of fur garments have sent the price of furs up to such an enormous height that a clever trapper can make a small fortune, if he handles his catch properly.

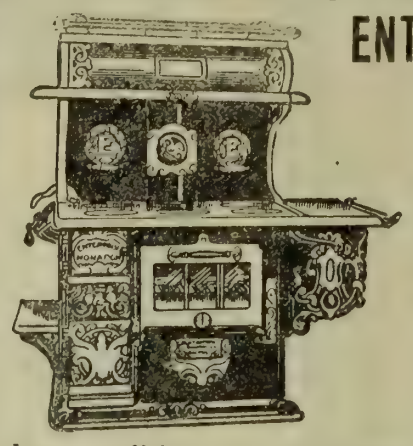
The fur trade has rightly been called the greatest of our natural resources. No industry, agricultural, mineral, or otherwise has been the origin of as much weath to this country and Canada as the fur industry. Before a single field was cultivated, the fur-bearing animals of this country were the only source of revenue. This was one of the main reasons for the rapid colonization of our country especially of the West. It was the trapper's trail that formed the path of the first highway, and the trappers fur formed the first cargo that was ever freighted on any of the inland waters o this country. It was also the trapper's catch that brought the first foreign wealth to this country, and ever since we have been practically supplying the world with furs. No other of our natural resources have been productive for so long a time or have yielded such an aggregate vealth as the furbearing animals, so fater all, the fur industry is not dying out. The fight is getting keener, and this promises to be the banner year for the trapper and fur shipper.

The Tenth Annual Convention of the Canadian Independent Telephone Association was held in Toronto on November 10th and 11th, and reports state that the convention was one of the most successful in the history of the organization. The attendance was good and the discussion of practical telephone subjects brought out much of interest and benefit to those interested in local telephone companies. The reports show that the Independent telephone development in Ontario has taken a very prominent place in the established investments of the Province, there being at the present time something about five hundred and forty local telephone systems in operation in Ontario alone according to government statistics. These companies represent an actual cash investment of about five million and a half dollars, which with the investment represented by free service of organizers and officers, free poles, etc., would probably bring this investment up to six million and a half. These systems are serving about 76,000 subscribers. It was felt that the development was on the increase, especially of municipal systems which are working out very successfully. The following resolution which was adopted by the convention indicates the appreciatio nshown of the encouragement and assistance given to the local systems in the province:

Resolved that this meeting of delegates assembled at the Tenth Annual convention of the Canadian Independent Telephone Association records its sincere appreciation of the services rendered to the local and rural telephone systems within the jurisdiction of Ontario by the provincial legislature in the enactment of "The Ontario Telephone Act" and all amendments thereto, and further congratulates the Ontario Railway and Municipal Board upon its fair and impartial administration of that Act which has resutled in very material assistance to the successful development of the telephone service of the province and has in many cases overcome difficulties which would otherwise have been insurmountable.

Everybody's Talking--The High Cost of Living

but it isn't everybody who can help lessen it. We can do so by providing you with an



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WHY? Because Food and Fuel are two big expense items and the Monarch can effect a big saving for you in these.

In construction, in equipment and the length of service it will give, we are safe in saying no range surpasses the Monarch. So that with these qualities and its reliability as a baker the Monarch renders First Aid in **Household Economy.**

Write today for free booklet and name of our nearest agent.

THE ENTERPRISE FOUNDRY CO.,

Sackville, N. B.

The Zig-Zag Cedar Roll Fence Has Outlived its Usefulness.

There is a growing sentiment in the country at large against the old zig-zag rail fence of primitive settlement days. This fence was never conceived to be pretty; but it was useful, cheap and easily put together. It's time, however, is now past and farmers who take pride in their farms are doing away with them and substituting neat, safe and effective wire fences.

The zig-zag wooden fence developed out of the superabundance of timber in parts of the country where it was prevailed and still prevails. Timber, through wanton destruction and absence of care, has now become scarce, comparatively speaking, and it would cost the farmer of taday something to fence his fields with the valuable rough-hewn rails used by his grandfather or great-grandfather. This is one of the reasons why these fences are not being built today. Timber is too valuable to be used for such a purpose. But so good is th ewood in many of these old snake fences that they will prevaill for many years to come, with a little repairing, unless a determination and a movement sets in to remove them and substitute more sightly field barriers. Nor, again, is this likely to take place, unless it can be demonstratedt o the average farmer that he has something to gain by the change. Well, there are things to be gained, as can very plainly be shown.

First, the zigzag fence takes up too much room and monopolizes too much land. Each triangular patch becomes in course of time a bed of weeds, the seeds of which blow over the otherwise clean, cultivated fields. Even if a farmer were determined to keep these fence lands free from weeds, he would have the greatest difficulty in doing so, because of the angular form of the vacant patches. But there is little or no attempt ever made to interfere with them and they are generally allowed an unmolested and mischievous existence. Lastly, they are not beautiful—the old snake fences—and othing can ever make them beautiful. But they are peculiar to Canada and form a common landscape object that has come to be ahabit with previous generations. There is so much in custom and association that our grandfathers and grandmothers, no doubt, thought them beautiful, simply because their eyes became accustomed to their homely aspect and their necessary existence in dividing one field from another; but, whether driving along the country roads or speeding by in a railway train, there is no doubt that the old zig-zag fences weary the eye of the traveller and impart a wooden appearance to the landscape. The fence is to every field and every road what the frame is to the picture. The frame gives the picture its setting and the fences are always a characteristic of a country. Hence the more pleasing to the eye, the neater, the more they beautify

FREE COMPLETE HOCKEY OUTFIT

BOYS—Don't pay $5.00 or $6.00 for a hockey outfit, when you can get **ABSOLUTELY FREE,** this magnificent outfit complete, consisting of a pair of splendid, strong, polished steel, hockey skates (all sizes), a good lively puck, and a strong, well-made rock elm hockey stick, and in addition every boy can secure as an extra present, a dandy pair of well-padded hockey gloves with fingers and wrists protected by cane splints covered with leather, or a pair of strong, heavy hockey boots with specially padded ankles and reinforcements across the insteps. **WITH THIS SPLENDID OUTFIT YOU WILL BE THE BEST EQUIPPED PLAYER ON THE TEAM.**

WRITE TO-DAY—before you forget, and we will send you by mail just **30** handsome bottles of our delightful Royal Japanese Perfume to sell among your friends at only 10 cents a bottle. Six different odors—White Rose, Arcadian Violet, Lilac, Carnation, Heliotrope, etc.; no trouble at all to sell; everybody wants two or three bottles. You will sell them all in an hour. Then return our **$3.00** and you will receive at once, the complete hockey outfit of fine quality skates, rubber puck and hockey stick which gives you the opportunity to also win the additional present of fine hockey gloves or hockey boots without selling any more goods. Hurry boys! We arrange to stand payment of all charges on your outfit right to your door under our reimbursement plan. 67

Address: **REGAL MANUFACTURING CO. DEPT. H. 3 TORONTO, ONT.**

the landscape. Not that the wire fences which are slowly but surely taking the places of the old snake fence are picturesque, but they are neat and set off the fields and the crops and the landscape in general to much more advantage. They seem to open up the beautiful fields to the eye and give an air of cleanliness, orderliness and nattiness to the whole country side.

Moreover, if it came to a sale of the farm, good wire fences would be quite a valuable asset. Besides bringing under cultivation much new valuable land, they improve the value of the farm lands as a whole.

Another grave disadvantage of the old zig-zag fence is that it does not lend itself very readily to gates on a farm snake-fence consist of four or five heavy rails which are not too sightly and are very inconvenient in the handling. The opening or shutting of such a gate is quite a job in itself. The wire fence, on the other hand, has wire-fenced gates all adapted to it, which open and shut with perfect ease.

Of course, like every other improvement, it may cost a little money to replace the old-time fences with modern fences; but when once a beginning is made it is woonderful how quickly a movement of the kind will spread. And there is now excellent fencing material to be got atreasonable prices.

A good place to begin the introduction of modern fences would be around the house and farm yard, with the lane or approach that leads from the highway tothe house, with the fence between the lawn and the highway, or with the farm yard itself. From these points the movement could be applied to the fields nearby, and thus the change and the expense attending it be spread over several years. Around the home it would be even better to plant some ornamental hedges, both as a shelter and to improve the home landscape. It would take Canada many generations to get the beautiful, and in summer flower-scented, lanes and roads that are a special feature of the English and other national landscapes. Our Canadian farmers would have to plant and grow hundreds of thousands of miles for hedges. All that requires long years of growth and development. But there is no reason why our rural landscape should not be greatly improved in appearance and utility by the adoption of the wire fence to replace the old-time zig-zag. It is well for a rural community to cultivate the aesthetic as well as the material and spiritual, and this would be one way of doing so.

Short Courses at the Sussex Agricultural School.

The Maritime Farmer again wishes to call the attention of its readers to the free ten days' course in Agriculture at the Agricultural School, Sussex, which will be held from January 11th to 21st, 1916.

The only expense to any one attending will be board while at Sussex, and railway fare at reduced rates. This course includes lectures and demonstrations in live stock, dairying, poultry, field crops, soil management and drainage, horitculture, beekeeping, fertilizers, insect pests, plant diseases and noxious weeds.

Purchase a single first class ticket to Sussex and get a standard certificate from your ticket agent.

A list of suitable boarding houses will be provided to students. Applications for enrolment in this course will be received up to January 10th. Send your application to A. G. Turney, Fredericton, N.B.

Nervous Dyspepsia

The Modern Scourge
and How to Meet it.

The speed at which we live, the hustle now so necessary for success have unfortunately a very adverse effect on the nervous and digestive systems of Canadians. The baneful results, increased lately to an alarming degree, often lay the seeds of more deadly trouble, but it will be satisfactory to learn of the ever-increasing popularity in the Dominion, of the Great British Remedy, Dr. Cassell's Tablets.

Dr. Ramsay Colles, J.P. of the City of Dublin, a man of high eminence in the scientific world, says :—" I have great pleasure in expressing my satisfaction as to the curative effect of Dr. Cassell's Tablets in cases of nerve troubles. From several cases which have lately come under my notice I am able to form the opinion that Dr. Cassell's Tablets constitute a safe and reliable family remedy, and appear to be specially effective for nerve and bodily weakness."

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great therapeutic value in all derangements of the Nerve, Digestive, and Functional Systems in old or young. They are the recognised modern home remedy for Dyspepsia, Nervous Breakdown, Stomach Catarrh, Kidney Disease, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto ; 1 tube 50 cents, 6 tubes for the price of five.

Sole Proprietors :—Dr. Cassell's Co., Ltd., Manchester, Eng.

Dr. Cassell's Tablets

GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

Britain's Greatest Remedy

DIRECT FROM FOUNDRY to You ONLY $33.75

Glenwood Ranges

Were Awarded TWO GOLD MEDALS

at the **Panama-Pacific** International Exposition at San Francisco, Cal., and were selected by the U. S. Government for Model Kitchen at the same fair.

One Gold Medal was awarded for the **GLENWOOD** Coal Range, the other for the **GLENWOOD** Wood Range, and yet these high-class ranges are within the reach of all at a much lower price than you will pay for an ordinary range. **BECAUSE** they are sold **DIRECT** from **FACTORY** to **YOU.**

GLENWOOD Ranges are "MADE IN ST. JOHN."

Write for Glenwood Range Book

Glenwood Ranges and Heaters

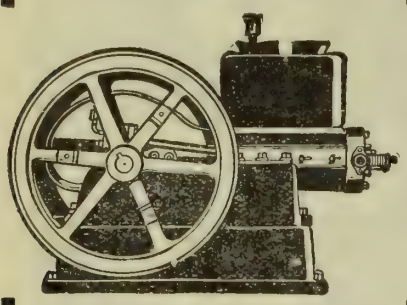
D. J. BARRETT,

Furnaces, Pipe and Fittings.

151-155 Union St., ST. JOHN, N. B.

Gilson Engine

"Goes Like Sixty"



ANYBODY can operate the simple "GOES LIKE SIXTY" Engine. Ready for work the moment you get it. Built strong and solid to last a lifetime. Will give long, unfailing satisfaction. Gas, gasoline or kerosene can be used for fuel.

GILSON QUALITY gives full value for your money—dependable service, great durability, highest economy and perfect satisfaction; freedom from trouble, delays and expense

EVERY ENGINE ABSOLUTELY GUARANTEED. You can try this engine on your own farm before settling for it. You take no chances.

THE "GOES LIKE SIXTY" Line has an engine for every purpose. All styles and sizes from 1 to 40 h. p.

Write for Catalogue

Gilson Manufacturing Co., Ltd.,
36 York St., GUELPH, ONT.

Do you want to earn $10 a week or more in your own home?

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.

AUTO-KNITTER HOSIERY CO.
Dept. 226 257 College St. - Toronto
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Opportunities for Girls

It looks more and more as if, owing to scarcity of skilled men, women will have to do much of the work hitherto done by men.

This is especially true of office work.

Of course, we are prepared to qualify either men or women to take advantage of their opportunities, and you can enter at any time.

Send for Catalogue containing tuition Rates, etc.

THE ST. JOHN Business COLLEGE

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Principal

SKILL IN FIGURING.

Competition has made it necessary for every business man to know accurately what the cost is to do business. In manufacturing lines cost is figured in decimals from the raw material to the finished product A man must know the percentage relation of expenses, rent, power, etc., to finished output. If you are rapid in calculation, you will add many dollars to your pay envelope. That is only a part of your training at this school. It pays to attend the Moncton Business College.

Geo. J. Schmidt, Principal
Moncton, N. B.

Try an Ad in the FARMER

What Community Wears This Shoe?

Here is a picture of a farm of 240 acres: In the road in front of the house is an old harrow piled up against a fence; in the back yard are a driving cart, a water cart, a plow, a self-binder, three cultivators, a low-wheeled seeder, a buggy, a power wood saw, a horse power and a disc harrow. In the barnlot are three farm wagons, one spring wagon, two hay frames, three cultivators, a manure spreader, a manure cart, a bob sled and a grain drill. In the lower feedlot is a hay loader; out in the pasture a four-section harrow, close to the turnip field gate a double-row cultivator, with the tongue run over the fence. A little farther down the lane is a four-section harrow laid up against the fence. In the meadow, close to the gate, is a side-delivery hayrake; over towards the centre of the field a mowing machine where the last swath was cut. Whether there are any more tools further back on the farm I am unable to say, as this is as far back as I have ever been.

There is no modern ten-room house with bath, furnace heat, hot and cold water, sanitary plumbing, electric washers, ironers, churners, bakers and cookers. There is no $5,000 barn fitted with manure, grain and litter carriers, modern stalls, bird-proof roller doors, paved yards, concrete tanks, windmills or gasoline engines. There are no good fences and gates, and no fine large herds of stock. There is a hay-carrier in the barn, a telephone in the house that can be used to speak to some neighbors when the sun, moon, stars an dall the rest of the planets and signs are just right, and a rural delivery route within one-half mile of the front door.

This sounds like an exaggeration, but it is not; it is a statement of facts as they actually exist. Neither is it an exceptional case, for it can be duplicated at any time without traveling very far in any part of the country.—Jason Cover, in Breeders Gazette.

A Remedy for Tail-Rubbing.

After several years' experience I have found the following to work very satisfactorily as a remedy to prevent horses from rubbing the roots of their tails:

Take a strong solution of salt and water, made into a brine, and apply it thoroughly to the irritated parts of the tail. One application is usually sufficient; if it is not apply it again. I keep the solution in a paint kag in the barn and when I ontice a horse rubbing his tail, I apply it.—K. C. Bartlett, in Breeders' Gazette

A Silo on Every Farm.

Saves the whole crop.
Insures "June pasture" in winter.
Saves labor and storage space.
Doubles farm capacity for livestock.
Prevents waste in feeding.
Saves frozen corn crop.
Makes better use of grain feed possible.

Dates to Remember.

Maritime Winter Fair—December 6, 7, 8 and 9, 1915, Amherst, N.S.

Three Days' Farmers' Course—December 14, 15 and 16, 1915, at Bathurst, N.B.

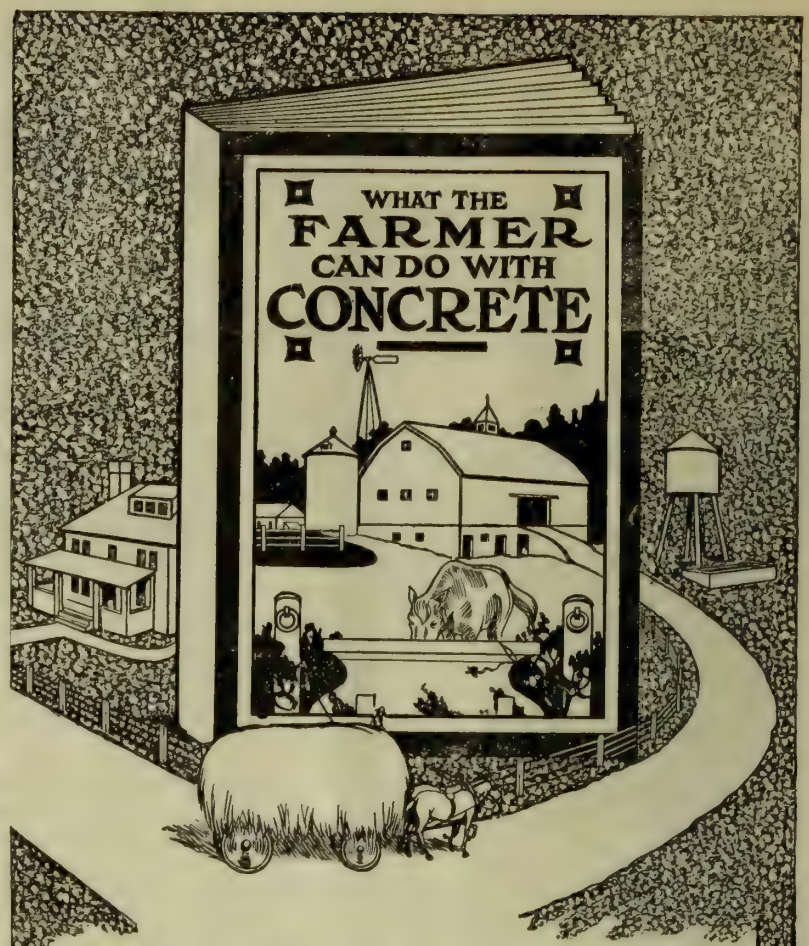
One Week's School Teachers' Course—January 3rd to 8th, 1916, at Sussex, N.B.

Ten Days' Farmers' Course—January 11th to 21st, 1916, at Sussex, N.B

Ten Days' Course in Rural Agriculture and Sociology for Clergymen—January 11th to 21st, 1916, at Sussex.

Short Courses, N. S. A. C.—January 4th to 14th, 1916, Truro, N.S.

Moncton Poultry Show—January 11th, 12th, 13th and 14th, 1916, Moncton, N.B.



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You'll find it brim full of valuable, dollar-saving information—more than 150 pages of illustrated plans and other interesting facts. It shows how to make better and more economical improvements on the farm—the kind that are fire-proof, weather-proof and wear-proof.

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Gentlemen:—Please send me a free copy of "What the Farmer Can Do With Concrete."

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THREE VITAL QUESTIONS

Are you full of energy, vital force, and general good health? Do you know that good digestion is the foundation of good health; Pains and oppression in stomach and chest after eating, with constipation, headache dizziness, are sure signs of Indigestion. Mother Seigel's Syrup, the great herbal remedy and tonic, will cure you.

AFTER MEALS TAKE

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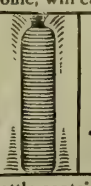

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At all Druggists, or direct on receipt of price, 50c. and $1.00. The large bottle contains three times as much as the smaller. A. J. WHITE & CO. LIMITED, Craig Street West, Montreal.

A BARGAIN.

Four turkey eggs, (Bronze) six Buttercups and five Single Comb Rhode Island Red eggs $2.00 Rhode Island Reds, Buttercups, $1.50 sitting 15 eggs. Best Buttercups eggs, birds good enough to exhibit, $2.00. Grey African Geese eggs 50c each. Blue Orpingtons from the bes English stock, I have one pullet in my flock from Crystle Palace, England, winner, and other birds from Boston and New York winners $5.00 for 15. Bronze turkey eggs $3.00 a dozen.

SARAH E. MOSES SMITH, - Woodward's Cove, N. B.

Buff Orpington Eggs for Hatching !

Exhibition stock, $3.00 for 15; Utility stock, $2.00 for 15.

Some fine young Guernsey Bulls for sale.

Highland View Dairy, R. R. Black, Amherst, N. S.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

Q. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

Elmhurst Stock Farm !

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE.

I have now for sale a few choice pure bred and Grade Bull Calves.

J. E. HETHERINGTON, CODY'S, N. B.

SHORTHORN BULLS

A number of first-class Bulls from 12 to 20 mos. old, for sale.

WALTER E. EATON, Upper Canard, - Kings Co., N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Clover Nook Stock Farm FOR SALE.

A few young Tamworths, male and female. The first Holstein Bull Calf at Fredericton. Several Ayrshires, Calves, Yearlings and Cows. Dorset Buck and Ewe Lambs.

R. E. KIDNEY, Manager. HARTLAND, N. B.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

S. C. Buff Orpington Eggs for Hatching $2.00 for 15.

GEO. E. WALKER, Highfield Farm - - Lower Truro, N. S.

LAWNDALE STOCK FARM

Pure bred Jerseys & Shorthorns

HERD BULL IN JERSEYS—"Olinda's Fern Lad" 3299-106133—Combining the blood of Sophie's Tormentor and Golden Fern's Lad. Bred at the Home of World's Champions, Hood Farm, Lowell.

We offer 2 Bulls, pure bred, sired by the above, out of Record of Performance Mothers. One, dropped Sept. 10, 1914. The other Nov. 8; 1914. Write for particulars.

I. M. LOVITT, M. D.
Yarmouth North, - - N. S.

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS !

I offer for immediate sale, the Gurnsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS, AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE, Bluebell ViewFarm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires !

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros., Sussex, N. B.

BARRED PLYMOUTH ROCKS

What's the use of paying big prices for Eggs for hatching when you can get the BEST LAYING STRAIN of Barred Rock Eggs, for $1.00 per setting. Parks Rocks have been bred for Egg production for over 25 years. A few Hens, Pullets and Cockerels for sale.

J. H. PRICHARD, - - SUMMERSIDE, P. E. I.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle—Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine—3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice Shropshire Ewes for sale at right prices. Also a lot of thrifty young Shorthorns, of the kind that can pick their own living off the land for at least six months of the year and keep on growing. Let us quote you our prices.

C. A. ARCHIBALD, - Clifton, N. S.

HIGH-RECORD HOLSTEINS

Having bought a farm at this address and removed my Holstein herd from Rockview Farm, "Welsford", I am prepared to supply a few choice young Bulls. I have also a few choice Yorkshire pigs, both sexes, about four months old.

WM. S. HARDING, - Hammond RIVER, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

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Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

John N. Chute, Berwick, N. S.
Howard W. Corning, Cheggogin, Yarmouth Co., N. S.
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Holstein Cattle.

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Jos. R. Taylor, Upper Dorchester, N. B.
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E. W. Heurtley, P. O. Sutherland's River, N. S.

Oxford Down.

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Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

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C A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
E. W. Heurtley, P. O. Sutherland's River, N. S.
Steward Bros., Murray River, R. R. No. 1, P. E. I.
J.W.Callbeck & Sons, Box 386, Summerside, P.E.I.
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CHOICE PURE BRED TOULOUSE GEESE for sale.—ERNEST L. EATON, Upper Canard, Kings Co., N. S.

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2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Volume 21. SUSSEX, NEW BRUNSWICK, DECEMBER 21, 1915. Number 6.

Fifteenth Annual Maritime Winter Fair

Bigger and Better Than Its Predecessors

An increased and extended list of prizes, greater and better accommodation for live stock and seeds, and commodious, comfortable lecture rooms were the attractions offered by the management of the Maritime Winter Fair in their announcements in the official prize list and in the public press to the exhibitors and general public.

The dates set for the fair, December 6th to 9th have passed and are now receding into the dim and distant past, but the ideas set by the fair live on and will ring true in the years that are to be.

Since the 1914 winter fair was held extensive transformations were made in the judging pavilion end of the fair. The partition which shut off the auditorium from the remainder of the building has been taken down and some of the seats have been removed so that the floor space has been greatly increased. Large windows have been put in the end of the building so that there is an abundance of light for stock judging. Two commodious lecture rooms have been constructed upstairs on the side adjoining the dairy barns. The testing room has been remodelled and in it the DeLaval Dairy Supply Co. have installed one of their up-to-date bottle washing machines, and a steam turbine Babcock tester, both of which are a great convenience for the men who have to do with the testing. There are also commodious quarters for the stockmen.

Exhibitors and visitors alike appre ciate the changes. Spectators can now see the various animals being judged to much better advantage than under the former arangement.

The Official Opening.

Everything was in readiness when the fair building doors were flung open to the public on Monday morning, December 6th. Every stall and pen were occupied. The dairy test was within a few hours of completion and every section of the show was running smoothly. The official opening took place at 8 p.m. on the evening of December 6th. Hon. Murdo McKinnon, Minister of Agriculture for Prince Edward Island, vice-president of the Maritime Stock Breeders' Association, presided and with him on the platform were ten or twelve men who take active interest in the Winter Fair and other public affairs.

Col. H. Montgomery Campbell, the President of the Association, was unable to be present, as he is in Halifax at the head of his regiment, the 64th, and before the evening session came to a close, at the suggestion of Rev. P. C. Gauthier of Prince Edward Island, three cheers and a tiger by hundreds of voices in the auditorium and galleries of the fair building rang true and clear for Col. Campbell, of the 64th.

His Worship Mayor Avard welcomed the visitors to Amherst. Warden Drysdale gave the welcome to the County of Cumberland. Hon. J. A. Murray, Minister of Agriculture, responded to the addresses of welcome after which Hon. A. F. McDonald, Lieutenant-Governor of Prince Edward Island, declared the fair formally opened. The other speakers for the evening were: Hon. E. H. Armstrong, Commissioner of Public Works for Nova Scotia; J. H. Grisdale, Director of Experimental Farms, Ottawa; John Bright, Live Stock Commissioner, and Rev. P. C. Gauthier, one of the big men of Prince Edward Island,—big in stature, big in heart, big in brain, and big in leadership.

The Judges

Beef cattle—F. R. Cromwell, M.P., Cookshire, Que.

Dairy cattle—Alf. Kains, Byron, Ont.

Sheep—Claude Bain, Taunton, Ont

Swine—Prof. E. S. Archibald, Dominion Animal Husbandman, Ottawa.

Poultry—F. C. Elford, Ottawa, J. H. Minshall, Brantford, Ont; Mr. McKinley, Ottawa.

Seeds—E. D. Eddy, Ottawa; J. Artemas Clark, Superintendent Experimental Stations, Charlottetown, P.E.I., and S. J. Moore, Truro.

Dressed carcasses—F. R. Cromwell, Claude Bain and Prof. E. S. Archibald.

Honey—J. Artemas Clark.

Dairy test—Harvey Mitchell; W. A. MacKay and several men prominent in cow testing association work.

The Experimental Farm, Nappan, had a well arranged exhibit of the various products of the farm as well as of models, the last word in barn and stable construction and fittings.

The Live Stock Division, Ottawa, had an interesting display showing the right and wrong way for marketing eggs which attracted more than passing notice by the visitors. The Sheep and Goat Division made a display of various grades of wool. The proper method of rolling and tying fleeces was shown and pictures of the various breeds of sheep were displayed on the walls.

Mr. Reg. Arkell, Chief of the Division, and competent men were on hand to give information to the hundreds of farmers who came in to study the exhibit.

The London Machinery Co., The De Laval Dairy Supply Co., The R. A. Lister Co., The Hinman Milker Co., The Renfrew Machinery Co. and the Empire Milking Machine Co., had booths at the fair and all report a thriving business. The stable and stall fittings shown by the London Machinery Co. came in for much favorable commert. A great many farmers were much interested in the milking machines.

The Beef Classes

Were stronger than ever. The influence of good breeding and feeding is coming into evidence more and more each year. There was a big class of Shorthorns, Herefords, Polled Angus and their Grades. With the exception of a very few animals the fitting had been carefully done. The refusal of Judge Cromwell to place awards last year where animals were ont of sufficient merit has done its work. It is no use to take an ill-fitted animal to the Maritime Winter Fair and breeders and exhibitors have come to recognize the fact. There are, however, a very few men who would bring in ill-fitted stock if there was any chance to take a little easy money, but we are proud to say they are few, and very few, in numbers. The majority of exhibitors at Amherst are of that high class that would deign to take their animals to the show in any other than in the pink of condition even if they were sure that they would not meet strong competition.

Shorthorns

John Bennett was down from Chatham with a bunch of R. A. Snowball's well fitted Shorthorns. J. M. Laird & Son came over from Prince Edward Island with a choice lot. Harold Etter, of Westmorland, was there too, as usual with a string of good ones.

Hazen Etter, Forrest Bros., C. H. Angus, Geo. M. Holmes, F. W. Sumner, Geo. A. Black, Clinton S. Corbett, Alfred Johnson, H. P. Lawrence and Harry Carter were the other exhibitors of Shorthorns. The battle was keen from start to finish and defeats were taken in a sportsmanlike manner. A full list of the prize winners in the respective sections will be found on another page of this issue.

Forerst Bros. had the best steer, a senior yearling by Hero of Strathallan. The champion female and grand champion of the Shorthorn class was the senior calf, White Blossom II, a daughter of White Blossom, the champion of the 1913 Winter Fair. White Blossom is by White Prince by Prince Ideal, the winner of so many first prizes when at the head of Mr. C. A. Archibald's Bellevue herd. White Prince was bred by Mr. Archibald out of Rosabella, also a noted prize winner in the Bellevue herd. The proud owner and breeder of White Blossom II is Mr. Harold Etter, who has for the third time—1911, 1913 and again this year captured the M. J. O'Brien silver cup and whose property it now becomes. R. A. Snowball, who captured the cup in 1912 and in 1914 barely missed winning it again as his Roan Mina, the first prize aged female and winner of the cup in 1914, was the reserve champion.

Mr. Etter says that White Blossom II was one of the smallest calves he had ever seen when she was born as her dam had carried her for only eight months. With the blood of prize winners in her veins and the good care and feeding of Mr. Etter, she developed rapidly and proudly carried of the sweepstakes for her breed.

J. M. Laird & Son captured the R. A. Snowball silver trophy for the best four animals, one under one year, one one-year-old, one two-year-old and on over three years old. Harold Etter captured this trophy in 1913. It will be interesting to follow the wanderings of this trophy until it is finally captured three times by some exhibitor, who's property it will be.

The $10.00 in gold specie prize for the best Shorthorn shown by a new exhibitor was won by F. W. Sumner, Moncton, N.B.

Only three beeves were slaughtered. The first and second prizes on dressed carcasses went to Forrest Bros. on their over 1 year and under 18 months Grade Shorthorn steer and their Grade Shorthorn heifer of the same age, first prize winners in their respective live classes.

Herefords and Aberdeen Angus

cattle competed in the same class. There was quite a contrast between the white faces and the Doddies, in point of color, but very little in point of quality. J. M. Laird & Son had an even, well-fitted lot of the black beauties, the only exhibitors of the breed. Edward P. Anderson, Forrest Bros., Wm. O'Brien & Sons, and B. W. Ralston upheld the traditions of the white faces, with well fitted individuals. Look up the list of prize winners elsewhere in this issue for the winnings in the respective sections of the class.

The sweepstakes prize of the class went to Edward P. Anderson's two-year-old Hereford steer. This steer also captured the International Harvester Co. of Canada Ltd., No. 55 Scuffler prize for the best beef animal, any breed or grade.

The best animal in the class shown by a new exhibitor was shown by Wm. O'Brien & Sons, to whom was awarded the $10.00 in gold special prize.

Grades of Any Beef Breed.

were out in strong numbers with oceans of quality. The lion's share of the first prizes went to Forrest Bros. who captured the sweepstakes for the best garde animal any age with their Grade Shorthorn steer calf. under six months.

Arthur Etter, Wm. Holmes, C. H. Angus, Harry Carter, Geo. B. Etter, Hazen Etter, J. M. Laird & Son, E. P. Anderson, Geo. A. Balck, R. W. & O. A. Coates, Harold Etter and Alfred Johnson were the other exhibitors of grade beef catttle.

R. W. & O. A. Coates captured the $10.00 gold prize for best grade beef animal shown by a new exhibitor.

The Dairy Test

On other pages of this issue will be found a full report of the dairy test, in which 108 cows participated. The 1914 dairy test had 99 contestants in it. Blanch La Honda, the champion of the 1914 test with a total score of 332.57 points as a seven year old, came back again this year and carried off the championship with a score of 300.00 points, on 224.0 lbs. milk, 9.62 lbs. butter fat and 19.28 lbs. solids not fat. Her record at the 1914 show was 273 lbs. milk, 10.51 pounds butter fat and 22.34 lbs. solids not fat.

Miss La Honda is a daughter of Sir Rooker Posch Artis out of Frau La Honda and was bred and is owned by S. Dickie & Son, Lower Onslow, N.S.

The highest score in 1913 was made by S. Dickie & Son's Mercena Artalissa with a score of 259.7 points.

The highest scoring three-year old was W. S. Harding's Sarcastic Lass De Kol, with a score of 249.2 points; 231.8 lbs. milk, 7.61 lbs. butter fat and 19.02 lbs. solids not fat. This honor in 1914 was captured by S. Dickie & Sons, Cobequid Polly Lass, with a score of 227.58 points. In 1913 the score in the same class was 196.56. The highest scoring two-year-old was Logan Bros.' Homestead Ida with a score of 178.4 points; 139.0 lbs. milk, 5.71 lbs. butter fat and 11.94 lbs. solids not fat. This honor was captured in 1914 by W. S. Harding's Sarcastic Lass De Kol with a score of 230.29 points; 203.3 lbs. milk, 7.15 lbs. butter fat and 17.18 lbs. solids not fat. The score of the 1913 class was 177.42 points.

Fowler Bros. had the highest scoring one-year old Holstein, Minnie H. Sprig, with a score of 151.7 points.

Ayrshires

The highest scoring Ayrshire was McIntyre Bros.' Mona D., the winner of similar honors in the 1914 test. She scored 221.3 points this year. Last year her score was 205.86 points. In 1913 the score in this class was 198.4.

A. McRae & Son's Rosabell with a score of 191.1, captured the first honors in the three-year-old class. Their Fairvue Queen was first in 1914 in the same class with a score of 188.80. In 1913 the highest score in this section was 211.8.

McIntyre Bros.' Molly D. came in for first money in the two-year-old section with a score of 133.9. Rosabell, the McRae winner of this honor in 1914 had a score of 141.67. In 1913 the score was 166.7.

F. S. Black's Peach was the highest scoring yearling heifer with 153.4. McIntyre Bros.' Bessie was first in 1914 with 117.43. The 1913 score was 72.85.

Look up in the dairy test tables the high average butter fat test of Prescott Blanchard's cows.

Jerseys

J. E. Baker & Sons' Pride led the aged Jersey cow class with a score of 189.4 points. Their Maud won the honor in 1914 with 174.42 points. The score in 1913 was 201.83.

W. E. Harding's Blood's Fair One was first in the three-year-old class with 198.3 points. Bakers' Queen 8th was first in 1914 with 156.88. In 1913 the score was 189.86.

H. S. Pipes & Son had the highest scoring two-year-old and one-year-old in City Cousin and Brilliant, yet with scores of 119.7 and 105.3 respectively. Baker's Queen led the 1914 two-year-old class with 151.05 points and Pipes & Son's Nordica won the 1914 two-year-old honors with 98.86. The 1913 scores in the two-year-old and one-year-old classes were respectively 149.01 and 136.40.

Guernseys

In the aged cow class D. G. McKay & Son's Daisy was first with a score of 187.3. The 1914 winner was Ruby with a score of 214.15 points. The 1913 score was 175.57.

Hugh A. Dickson's Gypsy Lass was first in the three-year-old class with a score of 156.78 points. D. G. McKay & Sons were first with their Heiress Rosa in 1914 with a score of 156.78 points. The 1913 score was 146.21.

Roper Bros.' Sister Brote of Eastview, led the two-year-old Guernsey class with a score of 146.2 points. High A. Dickson's Gypsy captured this honor in 1914 with 184.5 points. The 1913 score was 112.71.

D. G. McKay & Son's Beauty of Spruce Grove was first in the one-year-old class with a score of 106.3. Dickson's Retta was first in 1914 with 112.9 points.

Shorthorns

Walter Bulmer's May's Maid led the aged Shorthorn class with a score of 141.7. Arthur Etter's cow was first with a score of 106.40 in 1914. In 1913 the score was 149.32. The three-year-old class was led by Alfred Johnson's Lilly Red with a score of 126.3. Geo. M. Holmes captured this prize in 1914 with a cow scoring 71.91 points. The 1913 score was 95.28 points.

Geo. M. Holmes had the highest scoring two-year-old and one-year-old respectively with scores of 107.2 and 62.1 respectively. Alfred Johnson's Lily was first in 1914 with a score of 111.90 and J. McCully Pipes had the highest scoring yearling Shorthorn in 1914 with a score of 66.14. The score in the two-year-old section in 1914 was 102.96.

Grades

W. N. Boomer led the aged and three-year-old sections of the grade class with scores of 233.6 and 177.7 respectively. T. W. Keilor and Fowler Bros. captured these honors respectively in 1914 with scores of 228.20 and 172.72. The 1913 scores were 243.68 and 139.50. Fowler Bros. captured the first place in the two-year-old and one-year-old classes with scores of 189.4 and 160.9 points respectively. Hugh A. Dickson had the highest scoring grade in 1914 with 180.35 points. Fowler Bros. had the highest scoring grade yearling in 1914 with a score of 121.56. The 1913 highest scores in the grade two-year-old and one-year-old classes were 170.77 and 122.37 points respectively. Fowler Bros.' Patty, a grade Holstein, was the highest scoring one-year-old at the fair, 160.9 points.

W. N. Boomer's aged cow was the highest scoring grade 233.6 points.

Study the tables on other pages of this issue for fluctuations in weights, fat and solids not fat.

The Dairy Breeding Classes

There was a splendid aggregation of young breeding stock. Ayreshires, Holsteins, Jerseys, Guernseys and Grades.

Prescott Blanchard had the best Ayrshire, any age, in Hillside Perfection II. by Hillside Peter Pan, shown in the under 18 months class.

Lea & Clark had the sweepstakes Holstein, a junior yearling in Island Bell Rooker.

H. S. Pipes, junior yearling, All Gold, by His Reverence was the champion of the eJrsey class.

Roper Bros.' Beauty's Jennie, of Willow II, a junior yearling, was the champion of the Guernsey class.

Fowler Bros. had the best grade, any age.

Dairy Cattle Specials

Donated by the Holstein-Friesian Association of Canada:

Highest scoring aged cow in test, if a Holstein, $25; S. Dickie and Son.

Highest scoring three-year-old cow in test, if a Holstein, $25.00; W. S. Harding.

Highest scoring two-year-old cow in test, if a Holstein, $25.00; Logan Bros.

Grand Championship, $25.00, if a Holstein, S. Dickie & Son.

Special $18.00 in gold for highest scoring cow in test, any breed or grade, S. Dickie & Son.

The Dickie Challenge Cup for highest scoring cow, any breed or grade in the dairy test, S. Dickie & Son.

Highest Scoring grade cow in dairy test, W. N. Boomer.

Sheep

The sheep classes were well fitted throughout.

Albert Boswall Sr., John Retson and Samuel Lane upheld the honors of the Leicester Breed.

Lincolns were shown by Albert Boswall, Ernest Lund and C. D. Pugsley.

Chas. Symes and John Tweedy were the competitoors with Cotswolds.

Cephas Nunn, and Chas. Symes fought the battle royal with their Cheviots.

Geo. Boswall had everything his own way with his Horned Dorsets.

J. E. Baker & Sons, Oliver Saunders and E. Saunders put up a three-cornerer fight in the Southdown class.

Jas. E. Stewart and Geo. Boswall captured all the prizes in the Shropshire class.

Oxfords made a good strong showing with Jas. E. Baker & Sons, J. M. Laird & Son and Burder Goodwin in the ring.

Hampshires were shown by Cephas Nunn and Almon Boswall.

Albert Boswall, Almon Boswall and Parker Horne showed Suffolks.

There was particularly strong competition in the grade classes. They were all well fitted and showed the result of careful breeding by the use of purebred sires. They were the kind that any farmer may acquire if he sticks to the use of a purebred ram of one breed at the head of his flock for a number of years and pays a little more attention to care and feeding. The entire class readily impressed the onlooker as being a bunch of money makers for their owners. See list of prize-winners on another page.

Swine

Were strong in quality, but not so numerous as in former years.

With the exception of second prize on sow over 9 months, all the prizes in the Yorkshire class went to J. W. Callbeck.

Fowler Bros. and A. McRae & Sons had everything their own way in the Tamworth class.

Berkshires were shown by Fowler Bros., Jas. I. Stewart, J. R. Semple, Harry Carter, Saxby Semple and Peter Brodie.

A. H. Boswall and Wallace Stead showed Chester Whites.

The Grades were a good useful lot, with stronger competition than in any other class.

Poultry

The rows of coops in the poultry department instead of being crosswise the building were re-arranged lengthwise with broad aisles and cross passages which was much more convenient than the old arrangement.

The American and Mediterranean breeds predominated. The choicest trophy of the show went to a Barred Rock cock shown by Percy Carey, Yarmouth, N.S.

The birds throughout were a choice lot. It was no disgrace for a breeder to be otuside the money in some of the classes. Frequently there were enough good ones left after the prizes were awarded to make a good show by themselves.

The dressed poultry department was not as well patronized as in years

The Grand Champion of the 1915 Maritime Winter Fair was this two-year-old pure bred Hereford steer, owned by E. P. Anderson, Sackville, N.B.

Photo by Landry.

WHITE BLOSSOM II.

Heifer calf under 1 year, Sweepstakes Shorthorn at the 1915 Maritime Winter Fair. Bred, owned and exhibited by Harold Etter, Westmorland Point, N.B.—Photo by Landry.

Best four Shorthorns, owned byone exhibitor at the 1915 Maritime Winter Fair. Owned by J. M. Laird & Son, Kelvin Grove, P. E. I.—Photo by Landry.

gone by but the quality of the exhibit was first-class. E. C. Elford, chief of the Poultry Division, placed the awards in the dressed poultry class.

Apiarian Products.

The showing of aipiarian products was small, but good nevertheless.

Grains and Seeds

There was a good showing of grains and seeds. The Seed Division of the Maritime Winter Fair has done much to stimulate the interest in good seed. To win at Amherst, seeds and grain must be of the very best quality and absolutely clean, for the competition is getting keener every year. A full list of awards appear on another page of this issue.

The Evening Sessions of the Winter Fair

The Monday evening session of lectures at the Maritime Winter Fair was presided over by Hon. Murdo McKinnon, Minister of Agriculture for Prince Edward Island, who referred to the splendid showing made by the various exhibitors at the fair, the interest taken in its welfare by the citizens of Amherst, and to the good work done in behalf of the fair by Lieut.-Col. H. Montgomery-Campbell, who has heard his country's call and is now leading the 64th.

The mayor of Amherst welcomed the visitors and exhibitors and said that when the question of alterations to the fair building was introduced to his citizens there was not a dissenting voice.

Warden Drysdale of Cumberland, extended a hearty welcome in behalf of his county.

Hon. J. A. Murray, Minister of Agriculture for New Brunswick, made a very fitting reply to the addresses of welcome. He paid a high tribute to Col. Montgomery-Campbell who had joined the best and bravest of Britain's sons in their stand for the defence of the empire. Our young men have and are responding gallantly and will continue to do so until the treaty of peace is signed in Berlin. He also referred to the splendid response to the call for more production. He emphasized the value of an agricultural education, paying a tribute to the good work being done by the N. S. A. C. He outlined his province's policy re agricultural schools along the same lines as appeared in an interview with him published in these columns an issue or two ago. In closing he said that the Maritime Provinces were no longer looked upon as the shreds and patches of Canada. The other provinces of the Dominion have nothing on the Maritime Provinces where business conditions are more stable than in any other part of Canada.

Hon. A. F. MacDonald, Lieutenant-Governor of Prince Edward Island, delivered the following opening address:

Mr. President:

I am much pleased to be with you this evening at the opening of the 15th Winter Fair of the Maritime Stock Breeders' Association. Although seeds and honey are included in your prize list, along with live stock, live stock predominates at this show and completely overshadows the other sections. I am pleased with this because live stock is at the basis of successful agriculture in Eastern Canada, and agricultural development is best measured in the improvement that is being made in live stock.

Allow me then to congratulate you on the excellence of your show. As it is my first visit to your fair, I may say I am surprised at the quality and number of your beef cattle, at the results which I am told have been achieved in your dairy stables, and at the noise that can be made by exhibition classes of hens, turkeys, geese and ducks.

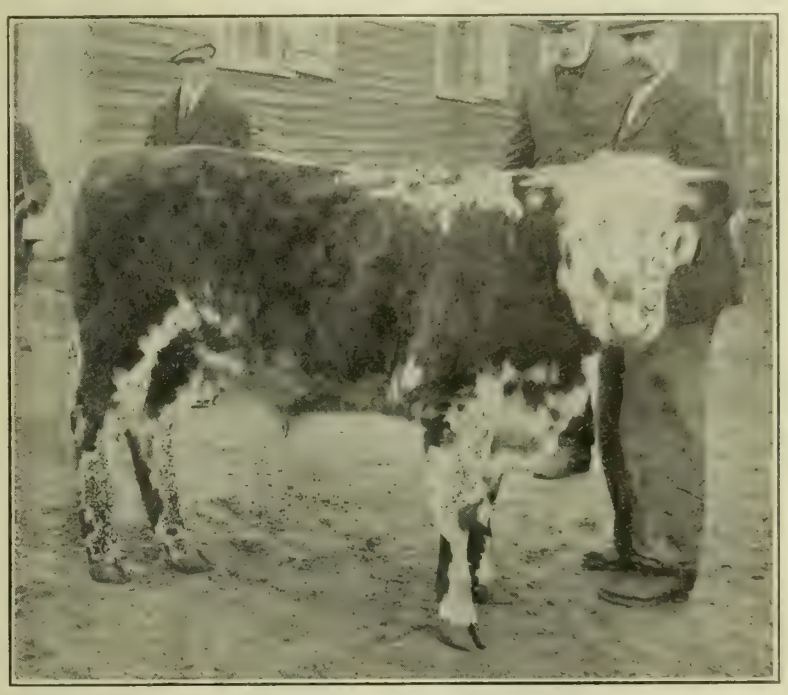
Your exhibit of seeds is not greater than I had expected as we generally have between 500 and 600 at our own Provincial Seed Fair.

I am not in a position to compare the exhibits with those of former years, but I am told that there is a great increase in numbers, and I suppose those who are doing the exhibiting think there is an equal increase in quality.

I do not intend to extend my remarks to any considerable length. I understand that you have on your programme for this evening, and for the next three days, the names of men who have made good in their several lines of agriculture, and I shall confine what I have to say on this subject to co-operation, and the first co-operative effort on which I might like to say something is the Amherst Fair. We have our Autumn Exhibitions held at Charlottetown, Halifax, St. John and Fredericton, and exhibitors from all of the provinces exhibit at each of these Fairs; but the Winter Fair differs from all of them; it is planned, financed and carried through by the combined effort of the three Maritime Provinces, assisted by the Live Stock Branches of the Federal Department of Agriculture. Further, the educational feature of the Winter Fair stands out pre-eminently. At the Autumn Fairs the judges award the prizes and now and again a bystander asks some questions, but here the judges speak on the classes that they have been judging, not only giving their reasons for their awards, but also explaining how animals can be bred, fed and generally cared for to bring them into such an excellent condition. These are 't'he men from Missouri," or I am told very often from Ontario, but what I would like to point out is that these men have fitted stock for the Winter Fairs themselves and are not only in a position to tell us which of these are the best, but also to tell us how it is done, and not only done, but done profitably. These are the class of men everyone wants to hear, and it is because you put men of this kind on your programme that your Fair is so well attended, and that farmers everywhere feel that they cannot afford to miss even for one year "The Maritime Winter Fair."

I am sorry to say that I had not sufficient notice to enable me to deal with one or two other subjects of Maritime interest, such as agricultural Education, and I would like to have told you something of what is being done through co-operative effort in Prince Edward Island—for the dairy our making. It was forced upon us industry, for the poultry industry, for the sheep industry, for the seed industry, and in fact for every department of Agriculture, but I notice that my time is going, and as the Representative of His Majesty in one of the Provinces of Canada I cannot let this opportunity pass without referring to the spirit of co-operation which has found its expression not only in the Maritime Provinces, or even in Canada, but in every part of the world over which floats the Union Jack. This war has been full of horrible doings, it has brought to the light the savage instincts of the barbarous Teuton, but it has also drawn together the separate units of which the British Empire is composed and fused them with the blood of all her best peoples. After Ypres where again can a British subject be found who will think of Canada as a colony, after the famous charge of the Ghurkas, what Briton can think of the inhabitants of India as undesirables? The name of Boer is no longer a synonym for deciet and treachery, and wherever the British flag flies the peoples of the earth will bear witness that the heart beneath it beats true.

Mr. President, Ladies and Gentlemen, this is an awful war; it is not of



A PROMISING GRADE CALF

Sweepstakes Grade at the 1915 Maritime Winter Fair. This steer calf is under 6 months and is owned by Forrest Bros, Amherst Point, N. S.—Photo by Landry.

by our blood thirsty and treacherous enemy, but out of it there will arise a newer earth dominated by the spirit of co-operation and helpfulness, and where mastery shall be sought for the purpose of service.

The Maritime Provinces are doing their part to bring this about. They are sending their quota of men and munitions. Those at home are holding up the hands of those in the trenches, and the Winter Fair is one of the agencies for promoting this most useful service.

Mr. Chairman, Ladies and Gentlemen: I thank you for this opportunity of addressing you. As the Representative of His Majesty from Prince Edward Island I have now much pleasure in declaring this 15th Annual Winter Fair, conducted by the Maritime Stock Breeders Association, formally opened.

Hon. E. H. Armstrong conveyed Premier Murray's regrets for being unable to be persent at the Winter Fair. He referred to the loyalty of the people of Amherst to the Winter Fair. The Maritime Winter Fair was one institution in which co-operation between Nova Scotia, New Brunswick and Prince Edward Island worked admirably and he saw no reason why they should not be equally successful if they co-operated along other lines. Canada had responded well to the Empire's call in men and the fact that the balance of trade is now in Canada's favor is a good indication that Canada is responding in the question of food supply. Business conditions very normal in the Maritime Provinces because their men and industries are of the right metal and clear stuff. Mr. Armstrong referred to the good work that the N. S. A. C. and the N. S. Technical Education Schools are doing. Dairying is progressing rapidly in Nova Scotia. The Rural Science Schools are instilling an interest in nature and agriculture in the minds of the young. In his closing remarks he referred to the good work that the exhibitors at the Winter Fair perform in the education of the masses to higher ideals in the breeding, feeding and care of live stock.

John Bright, Live Stock Commissioner for Canada was the next speaker. He told of the good reports that Mr. Cromwell, the beef cattle judge, had brought to him re the Maritime Winter Fair of 1914 and he was glad to be present at this fair to see for himself the progress being made. The management of the Maritime Winter Fair had been untiring in their efforts to organize and uphold a successful fair. It had been almost a labor of love with the most of them. They worked for nothing and boarded themselves. These men take pleasure in knowing that the fair is accomplishing the work for which it was organized, viz.: the education of the agriculturist to higher ideals in stock raising. There is no profit in feeding and breeding scrubs. Mr. Bright strongly recommended the three provincial Departments of Agriculture to help increase the prize list of the Maritime Winter Fair and in other ways to help make the directors' lot an easier and happier one, and thus encourage the production of more and better live stock. Before closing his discourse he put forth a plea for the better finishing of live stock, the standardizing of products and the co-operative selling.

The work done by the egg circles and the wool growers' associations, have done much along the line of getting producers and consumers together on the question of standardization and are examples of what may be accomplished along other lines.

J. H. Grisdale, Director of Experimental Farms, Ottawa, followed Mr. Bright. He had had the honor of being present at the first Maritime Winter Fair, and he has had the pleasure of visiting it quite frequently since then. He has thus kept in close touch with the progress the fair has made in the fifteen years of its existence. He hade special mention of the men who were associated with the early days of the Fair, some of whom have passed to the great beyond. He referred to the necessity of live stock to the country and the importance of grading up the herds and flocks. The grade herds of the country are the money makers. England and Scotland's farmers have prospered by live stock breeding and Canadian farmers can do the same. In closing he advised his hearers to make the best use of the various Experiment Farms and Stations and the reports and records that are published by them from time to time.

The last speaker of the evening was Rev. Dr. P. C. Gauthier, who is a strong believer in putting a premium on quality. He is doing good work in getting this premium for the goods the farmers of his district have for sale. He referred to the good work that nature study and short courses are accomplishing. He also advocated a Maritime agricultural college instead of a lot of weak separate schools, and closed his remarks by calling for three cheers for Col. Campbell of the 64th, which was heartily responded to by the audience.

(Continued on Page 199)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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DECEMBER 21, 1915.

DATES OF ISSUE.

January	11-25
February	8-22
March	7-21
April	4-18
May	2-16
June	6-20

"LOOK FOR YOUR MONEY WHERE YOU LOST IT."

Such was the counsel of a wise father to his son. The boy had failed in some project he had undertaken. Just what it was, we do not know. He might have lost a crop of wheat because of a hail-storm and was afraid to try wheat again. It may be that he lost a drove of hogs with cholera and declared that he would never again raise hogs. Possibly it was new to him and he was not onto the "how" of doing it. Sometimes a person learns more when he fails than when he succeeds. It is the schooling of experience that counts.

A man may fail to make money on a farm. He may find it harder work than he had thought for. That is no indication that he should quit. He is only preparing to begin. Of all lines of business farming is certainly the most flexible in this respect. Every man has within his own power the possibility of increasing or decreasing the profits, of making his work heavy or light according to his managing ability.

The use of proper farm records will show up the why and the wherefor of a lot of the leaks. Plugging up the leaks is one good way of increasing profits. Put down what you do and where you did it, what you spent and where you spent it, what you received and from whence it came. Then at the end of the year look over your record and see how much you did and what you got for doing it. Quit guessing. A guess is dangerous if you rely upon it for dollars and cents.

Some methods of keeping records are easier than others. Get a simple and complete method and you will enjoy keeping a good record.—O. S. and you will enjoy keeping a good record.

The Maritime Farmer wishes its readers, one and all, great and small, all the joys of a Merry Christmas.

FAT AND LEAN.

In the busy world of dairying even a few meagre calculations show great differences, whether in cows, their owners, the land, the bank deposits or the test of fat, etc.; fat and lean are mixed, good results and poor, even on adjoining farms, even in two stalls in the one stable. One owner gets perhaps 200 pounds of milk from each lean, hungry acre; a neighbor, with better methods, produces the fat total of seventeen hundred pounds of milk per acre, keeping 16 good cows on a well tilled eighty acre farm. One milk producer, with poor grade cows, never tested, possibly never well fed, get the lean average of less than three thousand pounds of milk per cow; another producer—who is a real dairyman—revels in the knowledge of each of his sixteen cows, giving over eight thousand pounds of milk that will test fairly rich in fat.

Then when it comes to feeding for profit, not simply for existence, we find one man with a hundred pounds of milk costing him only 59 cents for feed, but a neighbor has to admit the impeachment of milk costing him per hundred at least 90 cents, perhaps over a dollar. So one will make the fat profit above feed of over thirty dollars per cow, while his neighbor is down to the lean margin of only three dollars. Why do such amazing differences occur? Primarily because dairymen have not studied each cow individually. Dairy records alone can shed light on these problems. Milk and feed record forms, simple, easily kept, may be had free from the dairy division, Ottawa. Apply today and make each cow earn a good fat profit.

GREATER EFFICIENCY.

We would direct the attention of our readers to the advertisement that we have been carrying in recent issues of this publication, relative to the Short Courses at the College of Agriculture, Truro, N.S.

These Classes will be conducted from January 4th to the 14th next. Classes are offered for both sexes, those for the ladies to be held in the New Science Hall which has just been completed and the men's classes to be held in the splendid buildings formerly erected on the College Campus.

"Greater Efficiency on the Farms and in the Homes of Maritime Canada," the motto which the Principal has selected for the Courses is a most fitting one, suggesting as it does the unparalleled need for a larger knowledge of farming and also suggesting that every effort will be put forth by the staff at Truro to make the Short Courses help those who are seeking to become more efficient. The course is free to students from all parts of the Maritime Provinces. The railways grant special rates from all parts and the staff at Truro are prepared for the biggest and most successful classes yet held in the history of the College. Write to the Principal at the College at Truro for further particulars.

Being jealous of a successful competitor is foolish; imitate him.

* * *

There are lots of things being blamed on the weather that are really the effect of mean dispositions.

* * *

Did you attend the Maritime Winter Fair? If you did not you missed a treat. The high ideals exemplified in the cattle, sheep, swine and poultry and seeds classes were worthy of your very closest scrutiny. It makes no difference who you are or where you live you could not go back to your home from the Winter Fair without carrying in your mind some lessons in ideals that you would, if at all a live farmer, strive to emulate.

* * *

Before the next issue of the Maritime Farmer reaches our readers, Christmas, 1915 will have passed into the past. We will all be on the threshold of the new year, 1916.

Many changes have transpired in 1914. Thousands of our Maritime Province boys are serving their King and Country at the front. Many homes are mourning the loss of dear ones who fell with their face to the foe and others who have passed to the great beyond from their peaceful homes. We miss those who are away for a time as well as those who are gone forever, yet we must all press on and let us hope and pray that victory will crown our banners ere many more months elapse.

* * *

Aaron Ernst, Blockhouse, Lunenburg, N.S., has sent to the Maritime Farmer for publication the weight of a hog butchered recently by Isaac Zwicker, of Blockhouse. The hog was 16 months old and tipped the scales at 695 pounds. He is out with the challenge: "Who can beat it?"

Come along, boys, let us hear from you. No fish stories. What has our friend, Harry Alliston, of York County, to boast about this year in the hog line. He usually grows a big one. It is hard to down Lunenburg County on pork, and cabbage growing.

* * *

On other pages of the Maritime Farmer our readers will find the advertisements of the Short Courses which will be held at the N. S. A. C., Truro, early in January. Also the Short Courses that will be carried on by the New Brunswick Department at Sussex. The courses at the Woodstock School will be announced later. A great many of our farm boys are away at the front—many of those attended the short courses in former years and, if home, would be there again this year. It is a duty incumbent on farmers and farmers' sons who have not enlisted for active defence, but who are doing all they can for the cause of production to attend one of the short courses. They will find the ideas taught at the various schools and colleges a great incentive to do better work and do it easier than ever before. Plan to attend the courses. You can if you only try. Send the boy anyhow and come yourself if you can.

Result of the 72 Hours Dairy Test at the 1915 Maritime Winter Fair.

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	13.5	3.3	.44	8.3	1.12
2	13.9	3.4	.47	8.5	1.18
3	13.3	3.4	.45	8.5	1.13
4	13.5	3.3	.44	8.5	1.14
5	13.7	3.2	.43	8.4	1.15
6	15.1	4.1	.61	8.4	1.26
7	14.5	3.5	.50	8.1	1.17
8	14.2	3.7	.52	8.5	1.20
9	13.5	4.2	.56	8.3	1.12
	125.2		4.42		10.47

Class 11, Sec. 1.
Shorthorn.
Mary's Maid.
November 21, 1915.
141.7
First.
Walter Boomer.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	10.5	3.3	.34	8.9	.93
2	10.8	4.6	.50	9.4	1.01
3	11.6	5.9	.68	9.3	1.07
4	11.0	4.9	.53	9.5	1.04
5	10.1	3.9	.39	9.0	.90
6	10.5	4.0	.42	9.2	.96
7	10.8	4.4	.47	9.4	1.01
8	9.8	3.7	.36	8.6	.84
9	12.4	5.4	.66	8.9	1.10
	97.5		4.35		8.86

Class 11, Sec. 1.
Shorthorn.
Miss Springdale 3rd.
October 6, 1915.
137.1
Second.
Geo. M. Holmes.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	8.	3.6	.28	8.7	.69
2	10.9	4.0	.43	8.4	.91
3	10.	4.1	.41	8.3	.83
4	11.6	4.6	.53	8.7	1.00
5	10.	4.0	.40	8.8	.88
6	10.5	3.5	.36	8.7	.91
7	11.3	4.1	.46	8.5	.96
8	12.4	4.0	.49	8.4	1.04
9	11.2	4.8	.53	8.4	.94
	95.9		3.89		8.16

Class 11, Sec. 1.
Shorthorn.
Maggie 2nd.
May 11, 1915.
131.5
Third.
Arthur Etter.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	9.5	4.6	.43	9.0	.86
2	8.8	4.8	.42	8.9	.78
3	9.4	4.8	.46	8.4	.78
4	9.1	3.9	.35	8.9	.80
5	10.7	4.0	.42	8.7	.93
6	9.4	4.2	.39	8.7	.81
7	10.2	4.1	.41	8.7	.88
8	10.0	4.9	.49	8.7	.87
9	10.1	5.0	.50	8.6	.86
	87.2		3.87		7.57

Class 11, Sec. 1.
Shorthorn.
Dellia.
April 15, 1915.
129.2
Fourth.
Alfred Johnson.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	12.6	3.4	.42	8.5	1.07
2	12.5	4.6	.58	8.5	1.06
3	11.9	3.3	.39	8.5	1.01
4	12.5	3.2	.40	8.6	1.07
5	11.9	3.7	.44	8.5	1.01
6	14.2	3.8	.53	8.4	1.19
7	11.4	3.5	.39	8.8	1.00
8	10.3	2.8	.28	8.3	.85
9	11.9	3.7	.44	8.5	1.01
	109.2		3.87		9.27

Class 11, Sec. 1.
Shorthorn.
Peggie
November 25, 1915.
68.9
Sixth.
H. P. Lawrence.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	7.6	3.3	.25	9.0	.68
2	7.5	4.3	.32	8.6	.64
3	5.7	3.2	.18	8.8	.50
4	7.2	3.4	.24	9.0	.64
5	6.4	3.5	.22	8.9	.56
6	6.3	3.1	.19	8.7	.54
7	7.3	3.7	.27	8.2	.59
8	7.3	3.2	.23	8.1	.59
9	7.4	3.1	.22	8.0	.59
	62.7		2.12		5.33

Class 11, Sec. 2.
Shorthorn.
Lilly Red.
August 23, 1915.
126.3
First.
Alfred Johnson.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	10.9	3.7	.40	8.6	.93
2	10.7	3.9	.41	8.7	.93
3	10.6	3.9	.41	8.6	.91
4	10.5	3.3	.34	8.6	.90
5	10.3	3.7	.38	8.7	.89
6	10.7	3.6	.38	8.6	.92
7	10.6	3.7	.39	8.8	.93
8	9.7	3.1	.30	8.6	.83
9	9.0	2.7	.24	8.5	.76
	93.0		3.25		8.00

Class 11, Sec. 3.
Shorthorn.
Miss Amherst.
October 10, 1915.
116.3
Fifth.
Geo. M. Holmes.

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last calving, Total Score, Award, Owner's Name.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	5.5	4.2	.23	8.5	.46
2	7.1	4.0	.28	8.2	.58
3	6.7	4.2	.28	8.5	.57
4	5.9	4.1	.23	8.6	.50
5	7.0	3.4	.23	7.8	.54
6	7.2	4.1	.29	8.6	.62
7	6.2	3.7	.22	8.4	.52
8	7.8	3.8	.29	8.5	.66
9	6.8	4.2	.28	8.5	.57
	61.3		2.33		5.09

Class 11, Sec. 3.
Shorthorn.
Marshland Maid.
September 15, 1915.
79.7
Second.
Geo. P. Etter.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	8.1	3.3	.26	8.9	.72
2	6.3	4.1	.25	9.9	.56
3	7.0	3.9	.27	9.1	.63
4	6.4	3.5	.22	9.2	.58
5	7.3	4.6	.34	8.6	.62
6	7.4	3.5	.25	8.9	.65
7	7.0	4.0	.28	9.1	.63
8	4.6	4.0	.18	8.8	.40
9	4.6	3.1	.14	8.8	.40
	54.7		2.19		5.19

Class 11, Sec. 3.
Shorthorn.
Miss Springdale 5th.
October 12, 1915.
72.0
Third.
Geo. M. Holmes.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	6.0	3.8	.22	9.0	.54
2	5.8	3.4	.19	8.9	.51
3	5.7	3.5	.19	9.2	.52
4	5.8	4.2	.24	9.0	.52
5	6.8	3.9	.26	8.5	.57
6	5.7	5.0	.28	8.7	.49
7	5.4	4.4	.23	8.7	.47
8	4.9	3.5	.17	8.4	.41
9	4.4	3.5	.15	8.3	.36
	50.5		1.93		4.49

Class 11, Sec. 4.
Shorthorn.
Miss Springdale 8th.
October 16, 1915.
62.1
Second.
Geo. M. Holmes.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	18.9	4.1	.77	8.3	1.56
2	18.7	4.0	.74	8.4	1.57
3	19.7	4.1	.80	8.3	1.63
4	19.2	4.1	.78	8.7	1.67
5	19.5	4.0	.78	8.4	1.62
6	19.4	4.0	.77	8.5	1.64
7	19.0	4.0	.76	8.5	1.62
8	19.1	4.2	.80	8.6	1.64
9	20.2	4.3	.86	8.4	1.69
	173.7		7.06		14.44

Class 12, Sec. 1.
Ayrshire.
Mona D.
October 18, 1915.
221.3
First.
McIntyre Bros.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	16.3	4.7	.76	8.4	1.36
2	15.7	4.3	.67	8.4	1.31
3	15.8	5.0	.79	8.5	1.34
4	16.0	4.2	.67	8.5	1.36
5	16.3	4.2	.68	8.4	1.36
6	16.6	4.4	.73	8.5	1.41
7	16.7	4.4	.73	8.6	1.42
8	16.3	4.0	.65	8.5	1.38
9	17.7	4.2	.74	8.6	1.52
	145.4		6.42		12.47

Class 12, Sec. 1.
Ayrshire.
Snowdrift.
August 4, 1915.
206.7
Second.
McIntyre Bros.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	16.9	4.6	.77	9.2	1.55
2	15.5	4.8	.74	8.8	1.36
3	14.9	5.1	.76	8.9	1.32
4	15.6	4.6	.71	9.0	1.40
5	15.2	5.0	.76	8.6	1.30
6	16.3	5.0	.81	8.6	1.40
7	16.3	4.6	.74	8.5	1.38
8	15.2	4.1	.62	8.6	1.30
9	17.1	4.7	.80	9.2	1.57
	143.0		6.71		12.78

Class 12, Sec. 1.
Ayrshire.
Grange Sally.
November 24, 1915.
205.2
Third.
Prescott Blanchard.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	16.6	3.6	.59	8.7	1.44
2	17.4	4.0	.69	8.7	1.50
3	16.4	4.3	.70	8.6	1.41
4	16.6	4.1	.68	8.6	1.42
5	16.6	4.0	.66	8.6	1.42
6	16.2	4.3	.69	8.7	1.40
7	16.8	4.1	.68	8.4	1.41
8	16.8	3.9	.65	8.4	1.41
9	17.9	4.5	.80	8.7	1.52
	153.8		6.14		12.83

Class 12, Sec. 1.
Ayrshire.
Moss Rose.
November 15, 1915.
192.5
Fourth.
Prescott Blanchard.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	14.2	3.8	.53	8.8	1.24
2	17.8	4.7	.83	8.7	1.54
3	16.8	4.0	.67	8.8	1.47
4	16.0	4.6	.73	8.9	1.42
5	12.5	4.3	.54	8.6	1.07
6	16.0	4.4	.70	8.6	1.37
7	15.7	5.3	.83	9.0	1.47
8	15.0	4.3	.64	8.3	1.24
9	15.3	4.9	.74	8.5	1.30
	139.3		6.21		12.06

Class 12, Sec. 1.
Ayrshire.
Pinafore 4th.
November 16, 1915.
191.2
Fifth.
Fred S. Black.

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	15.6	4.1	.63	8.7	1.35
	2	15.8	3.6	.56	8.5	1.34
Class 12, Sec. 1.	3	16.6	4.0	.66	8.5	1.41
Ayrshire.	4	16.7	3.4	.56	8.6	1.43
Dalfiddle Randy.	5	17.9	3.5	.62	8.4	1.50
August 14, 1915.	6	16.2	3.6	.58	8.5	1.37
182.8	7	16.7	3.9	.65	8.5	1.41
Sixth.	8	16.5	3.5	.57	8.3	1.36
A. McRae & Sons.	9	17.2	3.8	.65	8.6	1.47
		149.2		5.48		12.64
	1	20.3	3.3	.66	8.9	1.80
	2	18.8	2.9	.54	8.6	1.61
Class 12, Sec. 1.	3	19.2	2.8	.53	8.9	1.70
Ayrshire.	4	19.4	2.7	.52	8.9	1.42
Princess Belle.	5	19.1	2.6	.49	9.1	1.73
November 24, 1915.	6	20.2	3.1	.62	8.7	1.75
178.6	7	21.7	3.3	.71	8.5	1.84
Seventh.	8	19.7	3.2	.63	8.3	1.63
John Retson.	9	19.6	3.2	.62	8.8	1.72
		178.0		5.32		15.20
	1	15.0	4.1	.61	8.3	1.24
	2	14.0	3.8	.53	8.3	1.16
Class 12, Sec. 1.	3	14.2	4.2	.59	8.5	1.20
Ayrshire.	4	14.6	3.6	.52	8.7	1.27
Nellie of Spring Brook Farm.	5	15.0	3.5	.52	8.2	1.23
September 23, 1915.	6	13.3	3.6	.47	8.6	1.14
162.4	7	14.7	3.9	.57	8.5	1.24
Eighth.	8	15.9	4.2	.66	8.2	1.30
A. McRae & Sons.	9	13.7	4.1	.56	8.5	1.16
		130.4		5.03		10.94
	1	15.6	4.3	.67	8.6	1.34
	2	16.4	3.7	.60	8.3	1.36
Class 12, Sec. 2.	3	16.7	4.2	.70	8.4	1.40
Ayrshire.	4	16.7	4.0	.66	9.2	1.53
Rosabell.	5	17.5	4.2	.73	8.3	1.45
October 31, 1915.	6	16.3	4.0	.65	8.6	1.40
191.1	7	17.2	4.1	.70	8.5	1.46
First.	8	16.5	4.3	.71	8.5	1.40
A. McRae & Sons.	9	16.0	4.4	.70	8.6	1.37
		148.9		6.12		12.71
	1	15.6	3.6	.56	9.9	1.54
	2	15.4	4.0	.61	8.7	1.33
Class 12, Sec. 2.	3	14.9	4.2	.62	8.8	1.31
Ayrshire.	4	15.5	3.8	.58	9.0	1.39
Hillside Sally.	5	14.2	3.6	.51	8.9	1.26
November 5, 1915.	6	15.7	4.0	.62	8.8	1.38
173.9	7	15.5	3.8	.58	8.8	1.36
Second.	8	14.6	3.7	.54	8.7	1.27
Prescott Blanchard.	9	16.9	4.9	.82	9.0	1.53
		138.3		5.44		12.38
	1	15.4	4.0	.61	8.4	1.29
	2	14.0	3.8	.53	8.4	1.17
Class 12, Sec. 2.	3	14.3	3.7	.52	8.5	1.21
Ayrshire.	4	15.0	3.5	.52	8.9	1.33
Eastcourt Primrose.	5	14.0	3.0	.42	8.4	1.17
October 15, 1915.	6	14.0	3.5	.49	8.4	1.17
151.4	7	15.1	3.5	.52	8.5	1.28
Third.	8	14.6	3.5	.51	8.0	1.16
John Retson.	9	14.6	3.8	.55	8.2	1.19
		131.0		4.67		10.97
	1	9.1	4.5	.40	8.6	.78
	2	9.3	4.2	.39	8.4	.78
Class 12, Sec. 2.	3	8.2	4.4	.36	8.6	.70
Ayrshire.	4	8.8	4.2	.36	9.1	.80
Morine.	5	9.3	4.	.37	8.6	.80
August 8, 1915.	6	9.3	3.9	.36	8.3	.77
114.5	7	9.7	4.1	.39	8.7	.84
Fourth.	8	9.5	3.9	.37	8.4	.79
McIntyre Bros.	9	10.0	4.1	.41	8.6	.86
		82.2		3.41		7.12
	1	10.1	4.	.40	8.6	.86
	2	10.0	3.5	.35	8.2	.82
Class 12, Sec. 3.	3	10.5	4.7	.49	8.9	.93
Ayrshire.	4	10.3	4.0	.41	9.2	.94
Molly D.	5	10.8	3.8	.41	8.7	.94
August 12, 1915.	6	11.6	4.2	.48	8.8	1.02
133.9	7	12 0	4.6	.55	8.7	1.04
First.	8	11.1	4.2	.46	8.5	.94
McIntyre Bros.	9	11.0	4.4	.48	8.5	.93
		97.4		4.03		8.42

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	10.5	3.7	.38	9.0	.94
	2	10.7	3.9	.41	9.0	.96
Class 12, Sec. 3.	3	10.6	4.3	.45	8.7	.92
Ayrshire.	4	10.4	4.3	.44	9.0	.93
Hillside Rose.	5	10.0	4.0	.40	9.2	.92
October 10, 1915.	6	10.7	5.0	.53	9.0	.90
131.1	7	10.0	4.4	.44	9.1	.91
Second.	8	10.6	4.6	.48	9.0	.95
Prescott Blanchard.	9	11.3	5.5	.62	8.8	.99
		94.8		4.15		8.48
	1	9.0	3.9	.35	8.5	.76
	2	8.9	4.1	.36	8.4	.74
Class 12, Sec. 3.	3	9.3	4.2	.39	8.6	.79
Ayrshire.	4	10.2	3.7	.37	9.0	.91
Ivy.	5	10.4	3.9	.41	8.3	.86
November 12, 1915.	6	10.6	4.2	.44	8.3	.87
115.3	7	10.9	4.1	.44	8.5	.92
Third.	8	10.8	4.1	.44	8.5	.91
McIntyre Bros.	9	11.4	4.3	.49	8.5	.96
		91.5		3.69		7.72
	1	12.2	4.2	.51	8.9	1.08
	2	12.7	4.4	.55	8.5	1.07
Class 12, Sec. 4.	3	12.9	4.3	.55	8.6	1.10
Ayrshire.	4	12.4	4.4	.54	8.6	1.06
Peach.	5	12.6	4.4	.55	8.5	1.07
November 11, 1915.	6	13.2	4.5	.59	8.6	1.13
153.4	7	12.5	4.3	.53	8.7	1.08
First.	8	13.3	4.1	.54	8.4	1.11
Fred S. Black.	9	13.1	4.6	.60	8.4	1.10
		114.9		4.96		9.80
	1	9.6	5.9	.56	9.0	.86
	2	8.1	4.5	.36	8.5	.68
Class 12, Sec. 4.						
Ayrshire.						
Pear.						
November 11, 1915.				SICK		
Sick						
Fred S. Black.						
	1	22.5	5.6	1.26	8.0	1.80
	2	23.1	6.0	1.38	8.0	1.84
Class 13, Sec. 1.	3	24.9	4.7	1.17	7.9	1.96
Holstein.	4	27.6	4.1	1.13	7.8	2.15
Miss La Honda.	5	28.0	3.4	.95	7.8	2.18
October 15, 1915.	6	29.0	3.4	.98	8.1	2.34
300.00	7	29.0	3.1	.89	7.9	2.29
First.	8	29.8	3.0	.89	7.8	2.32
Samuel Dickie & Son.	9	30.1	3.2	.96	8.1	2.40
		244.0		9.63		19.28
	1	23.	4.4	1.00	8.7	2.00
	2	23.7	4.0	.94	8.7	2.06
Class 13, Sec. 1.	3	23.1	4.0	.92	8.7	2.00
Holstein.	4	23.5	3.7	.86	8.9	2.09
Cobequid Hilma May.	5	22.9	4.3	.98	8.5	1.94
November 20, 1915.	6	23.3	4.0	.93	8.7	2.02
266.3	7	23.5	4.0	.94	8.6	2.02
Second.	8	23.9	3.9	.93	8.5	2.03
Samuel Dickie & Son.	9	24.	4.0	.96	8.6	2.06
		210.9		8.47		18.22
	1	22.5	3.4	.76	8.4	1.89
	2	23.4	3.7	.86	8.3	1.94
Class 13, Sec. 1.	3	23.4	3.4	.79	8.6	2.01
Holstein.	4	21.9	3.5	.76	8.6	1.88
Nellie Rooker.	5	22.6	3.2	.72	8.3	1.87
November 12, 1915.	6	24.5	3.6	.88	7.8	1.91
236.26	7	22.5	3.5	.78	8.2	1.84
Third.	8	22.5	3.5	.78	8.4	1.86
Lea & Clark.	9	26.5	3.9	1.03	8.4	2.22
		209.8		7.36		17.45
	1	25.2	3.2	.80	8.3	2.09
	2	23.8	2.9	.69	7.9	1.88
Class 13, Sec. 1.	3	24.8	3.5	.86	8.0	1.98
Holstein.	4	23.1	3.1	.71	8.2	1.89
Kate Abbekirk.	5	24.2	2.9	.70	8.0	1.93
October 3, 1915.	6	24.2	3.3	.79	7.7	1.86
229.9	7	22.6	3.3	.74	8.1	1.83
Fourth.	8	24.5	3.5	.85	7.9	1.93
W. S. Harding.	9	24.0	3.6	.86	8.0	1.92
		216.4		7.00		17.31

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	23.1	3.0	.69	8.3	1.91
	2	25.1	3.1	.77	8.2	2.05
Class 13, Sec. 1.	3	25.2	3.1	.78	8.2	2.06
Holstein.	4	23.6	3.0	.79	8.0	1.88
Hazel Sadie Belle.	5	25.0	3.1	.77	8.0	2.00
November 25, 1915.	6	22.5	3.5	.78	8.0	1.80
228.6	7	23.7	3.7	.87	8.4	1.99
Fifth.	8	23.2	3.4	.78	7.8	1.80
Logan Bros.	9	24.0	3.9	.93	7.8	1.87
		215.4		7.07		17.36
	1	23.2	3.8	.88	7.8	1.80
	2	20.4	3.4	.69	7.9	1.61
Class 13, Sec. 1.	3	21.3	3.9	.83	7.7	1.64
Holstein.	4	21.6	4.2	.90	8.0	1.72
Cobequid Helbon Princess.	5	20.6	3.4	.70	7.8	1.60
October 17, 1915.	6	21.9	4.0	.87	7.9	1.73
222.5	7	21.0	3.6	.75	8.0	1.68
Sixth.	8	20.8	3.3	.68	8.1	1.68
Samuel Dickie & Son.	9	21.6	3.5	.75	7.7	1.66
		192.4		7.05		15.12
	1	18.8	3.5	.65	8.7	1.63
	2	18.3	3.5	.64	8.5	1.55
Class 13, Sec. 1.	3	17.8	3.7	.65	8.7	1.54
Holstein.	4	17.8	3.4	.60	8.4	1.49
Gay Lad's Minnie Rooker.	5	17.5	3.0	.52	8.5	1.48
October 3, 1915.	6	17.6	3.0	.52	8.4	1.47
179.3	7	18.4	3.5	.64	8.3	1.52
Seventh.	8	17.1	3.2	.54	8.6	1.47
W. S. Harding.	9	18.0	3.7	.66	8.4	1.51
		161.3		5.42		13.66
	1	26.8	3.2	.85	8.6	2.30
	2	25.9	3.2	.82	8.1	2.09
Class 13, Sec. 2.	3	25.6	3.3	.84	8.1	2.07
Holstein.	4	25.6	3.2	.81	8.1	2.07
Sarcastic Lass DeKol.	5	25.7	3.0	.77	7.9	2.03
October 9, 1915.	6	25.7	3.4	.87	8.1	2.08
249.2	7	25.0	3.4	.85	8.0	2.00
First.	8	23.6	3.4	.80	8.9	2.10
W. S. Harding.	9	27.9	3.6	1.00	8.2	2.28
		231.8		7.61		19.02
	1	22.2	3.1	.68	8.0	1.77
	2	22.5	3.1	.69	7.8	1.75
Class 13, Sec. 2.	3	23.1	3.2	.73	7.9	1.82
Holstein.	4	22.4	3.1	.69	8.0	1.79
Island Aggie.	5	22.5	2.6	.58	7.7	1.73
October 10, 1915.	6	23.1	3.1	.71	7.7	1.77
206.5	7	22.2	3.0	.66	8.0	1.77
Second.	8	21.8	3.0	.65	7.8	1.70
Lea & Clark.	9	25.0	3.5	.87	7.7	1.92
		204.8		6.26		16.04
	1	18.4	3.4	.62	8.3	1.52
	2	22.4	4.2	.94	8.1	1.81
Class 13, Sec. 2.	3	19.7	3.6	.70	8.2	1.61
Holstein.	4	19.5	3.2	.62	8.7	1.69
Mercena Posch.	5	21.0	3.0	.63	8.2	1.72
November 20, 1915.	6	20.2	2.9	.58	7.8	1.57
192.8	7	20.5	3.3	.69	8.1	1.66
Third.	8	18.4	2.7	.49	7.9	1.45
Fowler Bros.	9	19.8	3.6	.71	8.2	1.62
		179.9		5.96		14.65
	1	15.7	3.1	.48	9.0	1.41
	2	16.1	3.1	.49	9.0	1.44
Class 13, Sec. 3.	3	17.6	3.5	.61	8.6	1.51
Holstein.	4	14.7	4.8	.65	8.5	1.16
Homestead Ida.	5	11.7	5.0	.58	8.2	.95
December 1, 1915.	6	14.0	5.0	.70	8.2	1.14
178.4	7	16.5	4.5	.74	8.6	1.41
First.	8	16.8	4.3	.72	8.8	1.47
Logan Bros.	9	16.9	4.4	.74	8.6	1.45
		139.0		5.71		11.94
	1	9.4	4.8	.45	9.6	.90
	2	11.9	4.4	.52	9.4	1.11
Class 13, Sec. 3.	3	13.5	4.1	.55	8.9	1.20
Holstein.	4	14.5	3.8	.55	9.4	1.36
Roda's Queen Beauty.	5	17.2	3.9	.66	9.0	1.55
December 2, 1915.	6	16.0	3.9	.62	9.2	1 47
171.3	7	17.5	3.7	.64	9.0	1.57
Second.	8	18.8	4.0	.75	9.0	1.69
Samuel Dickie & Son.	9	17.7	4.2	.74	9.1	1.61
		136.5		5.49		11.96

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent Fat.	Lbs Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	15.4	3.4	.52	9.0	1.38
	2	15.8	3.1	.49	8.5	1.34
Class 13, Sec. 3.	3	15.9	3.4	.54	9.1	1.44
Holstein.	4	16.0	3.2	.51	9.1	1.45
Edith Westhouse Colantha.	5	16.0	3.6	.57	9.0	1.44
November 29, 1915.	6	16.5	3.4	.56	8.6	1.41
160.1	7	16.0	3.4	.54	9.0	1.44
Third.	8	16.4	3.5	.57	8.7	1.42
Fowler Bros.	9	16.7	3.5	.58	8.8	1.47
		144.7		4.88		12.79
	1	14.7	3.7	.54	8.3	1.22
	2	14.0	3.0	.42	8.2	1.14
Class 13, Sec. 4.	3	16.5	3.7	.61	8.5	1.40
Holstein.	4	15.2	3.0	.45	8.5	1.29
Minnie H. Sprig.	5	15.8	2.7	.42	8.1	1.27
November 12, 1915.	6	16.7	3.4	.56	8.1	1.35
151.7	7	16.5	3.5	.57	7.8	1.28
First.	8	13.3	2.4	.31	8.1	1.06
Fowler Bros.	9	18.2	4.5	.81	8.2	1.49
		140.9		4.69		11.50
	1	13.8	3.2	.44	8.7	1.20
	2	13.8	3.0	.41	8.6	1.18
Class 13, Sec. 4.	3	12.5	2.5	.31	8.4	1.05
Holstein.	4	13.6	2.9	.39	8.3	1.12
Homestead Ora.	5	12.5	2.8	.35	7.9	.98
November 20, 1915.	6	12.5	3.6	.45	7.5	93
121.3	7	13.0	3.8	.49	8.1	1.05
Second.	8	12.3	3.2	.39	8.3	1.02
Logan Bros.	9	13.5	3.4	.45	8.1	1.09
		117.5		3.68		9.62
	1	14.5	3.3	.47	8.4	1.21
	2	11.7	3.0	.35	8.8	1.02
Class 13, Sec. 4.	3	13.0	2.7	.35	8.4	1.00
Holstein.	4	12.7	2.6	.33	8.1	1.02
Homestead Hazel.	5	15.4	2.9	.44	8.2	1.26
November 12, 1915.	6	13.2	3.5	.46	8.1	1.06
120.6	7	12.7	2.9	.36	8.4	1.06
Third.	8	14.4	3.4	.48	8.3	1.19
Logan Bros.	9	13.0	3.0	.39	8.2	1.06
		120.6		3.63		9.97
	1	15.7	4.3	.67	8.5	1.33
	2	15.7	4.2	.65	9.0	1.41
Class 14, Sec. 1.	3	15.3	4.3	.65	8.8	1.34
Guernsey.	4	15.9	4.0	.63	9.1	1.44
Daisy.	5	15.4	4.2	.64	8.9	1.37
November 17, 1915.	6	16.6	4.2	.69	8.6	1.42
187.3	7	16.3	3.9	.63	8.7	1.41
First.	8	17.2	4.1	.70	8.7	1.49
D. G. McKay & Son.	9	17.2	4.2	.72	8.6	1.47
		145.3		5.98		12.93
	1	14.9	4.7	.70	8.7	1.29
	2	15.3	4.8	.73	9.1	1.39
Class 14, Sec. 1.	3	15.2	4.4	.66	8.8	1.33
Guernsey.	4	15.0	4.0	.60	8.8	1.32
Rosy.	5	14.9	4.4	.65	8.8	1.31
November 15, 1915.	6	15.0	4.3	.64	8.7	1.30
180.2	7	15.4	4.0	.61	9.0	1.38
Second.	8	15.3	4.1	.62	8.7	1.33
D. G. McKay & Son.	9	14.8	3.9	.57	8.5	1.25
		135.8		5.78		11.99
	1	12.8	4.9	.62	9.1	1.16
	2	12.6	4.3	.54	8.9	1.12
Class 14, Sec. 1.	3	12.4	5.0	.62	8.9	1.10
Guernsey.	4	12.6	4.2	.52	9.0	1.13
Tansy of Willow.	5	13.6	4.6	.62	8.9	1.21
October 8, 1915.	6	13.3	4.6	.61	8.4	1.11
171.7	7	13.4	4.6	.61	8.9	1.19
Third.	8	14.7	4.5	.66	8.7	1.27
Roper Bros.	9	15.2	4.8	.73	8.4	1.27
		120.6		5.53		10.56
	1	12.0	4.5	.54	8.4	1.00
	2	12.1	4.5	.54	8.7	1.05
Class 14, Sec. 1.	3	11.9	4.5	.53	8.3	.98
Guernsey.	4	12.0	4.5	.54	8.9	1.06
Flora's Heiress.	5	12.0	4.6	.55	8.8	1.05
October 8, 1915.	6	12.2	4.6	.56	8.7	1.06
154.2.	7	12.0	4.3	.51	9.0	1.08
Fourth.	8	12.3	4.6	.56	8.7	1.07
D. G. McKay & Son.	9	12.4	5.1	.63	8.5	1.05
		108.9		4.96		9.49

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	16.7	5.3	.88	8.8	1.46
2	17.8	4.6	.81	8.4	1.49
3	15.3	5.1	.78	8.6	1.31
4	13.4	5.9	.79	9.1	1.21
5	13.6	5.1	.69	9.0	1.22
6	18.6	4.7	.87	8.9	1.65
7	16.9	5.5	.93	8.6	1.45
8	15.7	4.5	.70	8.8	1.38
9	18.6	5.4	1.00	8.5	1.58
	146.6		7.45		12.75

Class 14, Sec. 2. Guernsey. Gypsy Lass. November 15, 1915. 224.3 First. Hugh A. Dickson.

Class 15, Sec. 1. Jersey. Pride. November 25, 1915. 189.4 First. J. E. Baker & Sons

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	14.5	4.7	.68	9.0	1.30
2	14.0	4.2	.58	8.6	1.20
3	16.2	4.8	.77	9.1	1.47
4	14.3	4.4	.62	9.5	1.35
5	14.0	4.9	.68	9.2	1.28
6	15.0	4.5	.67	8.8	1.32
7	14.9	4.2	.62	9.4	1.40
8	15.1	4.3	.64	8.8	1.32
9	15.1	4.6	.69	8.1	1.22
	134.6		6.13		12.09

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	10.1	4.9	.49	8.6	.86
2	10.5	4.7	.49	8.8	.92
3	10.1	5.	.50	9.1	.91
4	10.7	4.6	.49	9.4	1.01
5	9.4	4.9	.46	9.3	.87
6	10.6	5.2	.55	9.3	.98
7	10.9	5.0	.54	9.3	1.01
8	10.4	4.7	.48	8.8	.91
9	11.4	5.0	.57	8.6	.98
	94.1		4.57		8.45

Class 14, Sec. 2. Guernsey. Nellie of Spruce Grove. October 31, 1915. 139.4 Second. D. G. McKay & Son.

Class 15, Sec. 1. Jersey. Maud. November 21, 1915. 189.3 Second. J. E. Baker & Sons

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	12.6	4.2	.53	9.2	1.15
2	15.0	5.0	.75	8.7	1.30
3	16.4	5.8	.95	8.9	1.45
4	14.7	5.	.74	9.5	1.39
5	1.40	4.9	.68	9.2	1.28
6	15.0	4.5	.67	8.8	1.32
7	13.3	4.0	.53	9.2	1.22
8	15.1	4.3	.64	8.8	1.32
9	14.6	4.7	.68	8.7	1.27
	130.7		6.17		11.70

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	4.1	3.3	.13	9.0	.36
2	14.6	5.9	.86	8.7	1.27
3	8.4	7.1	.59	8.9	.74
4	7.7	5.8	.44	9.2	.70
5	7.0	5.4	.37	9.4	.65
6	8.2	4.7	.38	9.7	.79
7	8.5	5.3	.45	9.0	.76
8	9.7	4.8	.46	8.7	.84
9	10.3	5.5	.56	8.6	.88
	78.5		4.24		6.99

Class 14, Sec. 2. Guernsey. Bessie Queen. August 5, 1915. 132.7 Third. Hugh A. Dickson.

Class 15, Sec. 1. Jersey. Ina's Pearl. November 22, 1915. 179.6 Third. H. S. Pipes & Son.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	13.2	4.9	.64	8.6	1.13
2	12.8	4.1	.52	8.5	1.08
3	13.9	5.2	.72	8.6	1.19
4	13.6	5.2	.70	9.4	1.27
5	12.9	4.9	.63	8.6	1.11
6	13.2	5.1	.67	9.2	1.21
7	13.7	5.7	.78	8.7	1.19
8	13.3	5.0	.66	8.8	1.17
9	12.4	4.6	.57	8.9	1.10
	119.0		5.89		10.45

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	12.5	4.5	.56	8.5	1.06
2	11.6	3.8	.44	8.7	1.00
3	13.1	4.2	.55	8.7	1.13
4	11.7	4.1	.48	8.6	1.00
5	12.2	4.2	.51	8.7	1.06
6	12.3	4.4	.54	8.8	1.08
7	12.3	4.5	.55	8.8	1.08
8	11.4	3.4	.38	9.0	1.02
9	13.5	4.6	.62	8.5	1.14
	110.6		4.63		9.57

Class 14, Sec. 3. Guernsey. Sister Brote of Eastview. October 6, 1915. 146.2 First. Roper Bros.

Class 15, Sec. 1. Jersey. Amherst Ruby. October 19, 1915. 179.4 Fourth. W. E. Harding.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	14.2	4.3	.61	9.4	1.33
2	14.8	4.4	.65	8.9	1.31
3	14.0	4.6	.64	9.4	1.31
4	14.5	4.4	.63	9.4	1.36
5	15.	4.2	.63	9.0	1.35
6	13.6	4.3	.58	9.7	1.31
7	15.0	4.3	.64	8.8	1.32
8	15.6	4.2	.65	9.1	1.41
9	13.9	5.0	.69	9.6	1.33
	130.6		5.72		12.03

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	11.2	5.	.56	8.5	.95
2	11.0	4.2	.46	9.0	.99
3	10.4	4.4	.45	8.9	.92
4	10.7	4.2	.44	8.8	.94
5	10.4	4.5	.46	9.0	.93
6	11.2	4.5	.50	9.1	1.01
7	11.6	4.4	.51	8.7	1.00
8	11.3	3.9	.44	9.0	1.01
9	12.8	4.8	.61	8.7	1.11
	100.6		4.43		8.86

Class 14, Sec. 3. Guernsey. Reta. November 16, 1915. 137.1 Second. Hugh A. Dickson.

Class 15, Sec. 1. Jersey. Blood's Choice. November 24, 1915. 179.0 Fifth. H. S. Pipes & Son.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	12.8	5.0	.64	9.5	1.21
2	11.6	4.9	.56	9.0	1.04
3	12.3	4.9	.60	8.9	1.09
4	12.9	5.5	.70	9.7	1.25
5	12.2	5.1	.62	8.4	1.02
6	12.4	5.0	.62	8.8	1.09
7	12.6	5.8	.73	9.0	1.13
8	11.1	4.4	.48	8.9	.98
9	13.2	5.4	.71	8.5	1.12
	111.1		5.66		9.93

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	7.0	5.8	.40	8.1	.56
2	7.3	5.3	.38	8.5	.62
3	6.9	4.6	.31	8.8	.60
4	7.4	4.6	.34	8.6	.63
5	8.2	5.0	.41	8.7	.71
6	6.7	4.8	.32	9.4	.63
7	7.6	4.6	.34	8.9	.67
8	7.4	4.4	.32	8.8	.65
9	7.7	4.6	.35	8.5	.65
	66.2		3.17		5.72

Class 14, Sec. 4. Guernsey. Jennifar of Willow. October 15, 1915. 98.3 Second. Roper Bros.

Class 15, Sec. 1. Jersey. Jean of Glenview. October 31, 1915. 143.6 Seventh. J. R. Semple.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	11.2	5.6	.62	8.9	.99
2	9.9	4.5	.44	8.8	.87
3	10.4	4.9	.50	9.0	.93
4	10.0	4.6	.46	9.3	.93
5	10.5	5.1	.53	9.1	.95
6	11.0	6.0	.66	9.1	1.00
7	10.3	5.5	.56	9.0	.92
8	10.0	4.6	.46	8.5	.85
9	10.4	5.0	.52	8.4	.87
	93.7		4.75		8.31

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	5.5	5.5	.30	8.7	.47
2	6.6	4.4	.29	8.4	.55
3	7.5	4.3	.32	8.2	.61
4	7.2	3.9	.28	8.6	.61
5	7.7	4.3	.33	8.6	.66
6	8.3	3.5	.29	8.4	.69
7	8.8	3.7	.32	8.7	.76
8	9.5	3.9	.37	8.6	.81
9	10.1	4.1	.41	8.4	.84
	71.2		2.91		6.00

Class 14, Sec. 4. Guernsey. Gipsy Heiress. November 15, 1915. 90.7. Third. Hugh A. Dickson.

Class 15, Sec. 1. Jersey. Queen. September 29, 1915. 142.5 Eighth. J. R. Semple.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
1	10.0	5.5	.55	9.0	.90
2	9.2	4.8	.44	8.9	.81
3	10.8	5.3	.57	8.5	.91
4	9.4	5.0	.47	9.4	.88
5	10.6	5.1	.54	9.1	.96
6	10.2	5.2	.53	8.8	.89
7	10.2	5.4	.55	9.1	.92
8	10.2	5.0	.51	8.7	.88
9	9.5	5.0	.47	8.6	.81
	90.1		4.63		7.96

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	10.0	5.6	.56	9.2	.92
	2	9.8	5.1	.49	8.7	.85
Class 15, Sec. 1.	3	9.6	5.7	.54	9.3	.89
Jersey.	4	9.8	5.6	.54	9.5	.93
Babbit.	5	9.8	5.5	.53	8.7	.85
November 12, 1915.	6	9.4	5.6	.52	9.6	.90
140.6	7	9.2	5.9	.54	8.8	.80
Ninth.	8	9.5	5.3	.50	8.8	.83
H. S. Pipes & Son.	9	8.5	5.6	.47	9.8	.83
		85.7		4.69		7.90
	1	15.4	5.	.77	8.8	1.35
	2	15.6	4.6	.71	8.9	1.38
Class 15, Sec. 2.	3	16.4	5.2	.85	8.5	1.39
Jersey.	4	16.7	5.3	.88	9.0	1.50
Blood's Fair One.	5	13.2	4.0	.52	8.9	1.17
November 9, 1915.	6	16.6	4.3	.71	8.8	1.46
198.3	7	16.0	4.8	.76	8.6	1.37
First.	8	14.3	4.0	.57	8.7	1.24
W. E. Harding.	9	16.3	4.3	.70	8.7	1.41
		140.5		6.47		12.27
	1	14.2	3.9	.55	8.7	1.23
	2	11.4	4.1	.46	8.7	.99
Class 15, Sec. 2.	3	13.5	4.2	.56	8.6	1.16
Jersey.	4	13.5	4.5	.60	9.1	1.22
Foxey.	5	13.0	4.2	.54	9.3	1.20
October 6, 1915.	6	13.0	4.3	.55	8.6	1.11
151.0	7	12.8	4.0	.51	8.8	1.12
Second.	8	12.6	3.7	.46	8.5	1.07
J. R. Semple.	9	12.3	4.3	.52	8.2	1.00
		116.3		4.75		10.10
	1	10.9	4.3	.46	9.6	1.02
	2	11.7	4.2	.49	8.9	1.04
Class 15, Sec. 2.	3	11.1	4.5	.49	9.1	1.01
Jersey.	4	12.	4.2	.50	9.4	1.12
Olive Dawn.	5	12.5	4.2	.52	9.0	1.12
November 2, 1915.	6	11.3	4.6	.51	9.5	1.07
142.6	7	12.3	4.5	.55	9.2	1.13
Third.	8	12.5	4.2	.52	8.8	1.10
H. S. Pipes & Son.	9	11.2	4.5	.50	9.5	1.06
		105.5		4.54		9.67
	1	9.5	5.1	.48	9.0	.85
	2	9.5	4.0	.38	8.4	.79
Class 15, Sec. 2.	3	9.8	4.3	.42	8.7	.85
Jersey.	4	9.7	5.1	.49	9.1	.88
Chatham Maid.	5	9.3	4.7	.43	8.9	.82
September 12, 1915.	6	9.5	4.7	.44	9.0	.86
128.0	7	10.1	4.8	.48	8.2	.82
Fourth.	8	9.2	4.5	.40	8.4	.77
H. S. Pipes & Son.	9	9.6	5.3	.50	9.3	.89
		86.2		4.02		7.53
	1	9.4	5.2	.48	9.0	.84
	2	9.2	4.1	.37	8.8	.80
Class 15, Sec. 3.	3	9.2	4.5	.41	9.0	.82
Jersey.	4	9.4	4.8	.45	9.3	.87
City Cousin.	5	9.5	4.6	.43	9.0	.85
November 4, 1915.	6	9.4	4.7	.44	8.8	.82
119.7	7	9.8	5.0	.49	9.1	.89
First.	8	9.6	4.3	.41	8.6	.82
H. S. Pipes & Son.	9	9.1	4.5	.41	9.5	.86
		84.6		3.89		7.57
	1	8.0	5.0	.40	9.6	.76
	2	7.6	4.3	.32	9.3	.70
Class 15, Sec. 3.	3	8.1	5.1	.41	9.3	.75
Jersey.	4	8.1	5.4	.43	9.7	.78
Brampton Mousie.	5	8.3	4.6	.38	9.4	.78
September 19, 1915.	6	8.2	5.2	.42	9.1	.74
118.9	7	9.1	5.6	.50	9.0	.81
Second.	8	8.8	4.8	.42	8.8	.77
H. S. Pipes & Son.	9	9.0	5.5	.49	9.4	.84
		75.2		3.77		6.93
	1	8.6	4.2	.36	8.8	.75
	2	8.3	3.9	.31	8.7	.72
Class 15, Sec. 3.	3	8.7	4.2	.36	8.8	.76
Jersey.	4	8.5	3.8	.32	9.2	.78
Princess 2nd.	5	8.9	3.9	.34	9.0	.80
September 24, 1915.	6	8.4	3.6	.30	8.8	.73
97.8	7	8.2	3.8	.31	9.0	.73
Third.	8	8.7	3.9	.33	8.7	.75
J. R. Semple.	9	8.3	3.9	.32	8.3	.68
		76.6		2.95		6.70

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	6.7	4.2	.28	9.0	.60
	2	7.1	4.3	.30	9.1	.64
Class 15, Sec. 3.	3	7.2	4.5	.32	9.0	.64
Jersey.	4	7.2	4.0	.28	9.4	.67
Fixit.	5	8.2	4.2	.34	9.0	.73
December 1, 1915.	6	7.6	4.4	.33	9.4	.71
94.4	7	8.5	4.6	.39	9.0	.76
Fourth.	8	8.6	4.3	.36	8.8	.75
H. S. Pipes & Son.	9	8.8	4.8	.42	9.3	.81
		69.9		3.02		6.71
	1	7.3	5.2	.37	9.1	.66
	2	6.8	4.4	.29	9.1	.61
Class 15, Sec. 4.	3	8.0	4.8	.38	9.0	.72
Jersey.	4	7.6	5.2	.39	9.7	.73
Brilliant Yet.	5	7.4	4.7	.35	8.9	.66
September 13, 1915.	6	7.6	5.0	.38	9.3	.70
105.3	7	8.1	5.0	.40	9.0	.72
First.	8	7.7	5.2	.40	8.8	.67
H. S. Pipes & Son.	9	6.8	4.8	.32	9.2	.62
		67.3		3.28		6.08
	1	6.	5.0	.30	9.1	.54
	2	6.	4.5	.27	9.1	.54
Class 15, Sec. 4.	3	6.	4.5	.27	9.5	.57
Jersey.	4	6.	5.1	.30	9.6	.57
Special Luck.	5	6.3	4.4	.27	9.1	.57
November 13, 1915.	6	6.0	5.1	.30	9.5	.57
78.7	7	6.2	4.5	.27	9.2	.57
Second.	8	6.4	4.4	.27	9.1	.58
H. S. Pipes & Son.	9	5.8	5.3	.30	9.8	.56
		54.7		2.55		5.07
	1	4.9	5.6	.27	9.4	.46
	2	4.2	4.7	.19	9.4	.39
Class 15, Sec. 4.	3	5.8	5.2	.30	9.7	.56
Jersey.	4	5.1	5.2	.26	9.4	.47
Discount.	5	4.6	4.8	.22	9.0	.41
October 27, 1915.	6	5.3	5.4	.28	9.7	.51
71.1	7	5.6	5.4	.30	9.1	.50
Third.	8	5.3	4.6	.24	8.9	.47
H. S. Pipes & Son.	9	5.3	5.4	.28	9.3	.49
		46.1		2.34		4.27
	1	22.5	4.0	.90	8.1	1.82
	2	23.7	3.5	.82	7.7	1.82
Class 16, Sec. 1.	3	24.6	3.5	.86	7.7	1.89
Grade.	4	23.0	3.3	.75	8.1	1.86
Molly.	5	24.7	3.2	.79	7.8	1.95
November 5, 1915.	6	25.3	3.3	.83	7.6	1.92
233.6	7	23.8	3.2	.76	7.6	1.80
First.	8	24.1	3.3	.79	7.6	1.83
W. N. Boomer.	9	23.5	3.6	.84	7.9	1.85
		215.2		7.34		16.74
	1	28.	2.9	.81	7.9	2.21
	2	29.1	2.7	.78	7.5	2.18
Class 16, Sec. 1.	3	29.4	3.2	.94	7.8	2.29
Grade.	4	27.3	2.8	.76	7.6	2.07
Jewel	5	27.7	2.4	.66	7.4	2.04
November 12, 1915.	6	30.	3.0	.90	7.3	2.19
233.0	7	26.4	2.5	.66	7.3	1.92
Second.	8	27.8	3.2	.87	7.4	2.02
T. W. Keilor.	9	28.9	2.9	.83	7.9	2.28
		253.1		7.04		19.00
	1	27.8	2.7	.75	8.1	2.25
	2	27.0	2.6	.70	7.8	2.10
Class 16, Sec. 1.	3	28.0	2.6	.72	7.9	2.21
Grade.	4	28.3	2.7	.76	7.9	2.23
Fanny K.	5	27.5	2.7	.74	7.8	2.14
November 2, 1915.	6	29.9	2.7	.80	7.5	2.24
228.6	7	28.5	2.6	.74	7.7	2.19
Third.	8	27.8	2.4	.66	7.5	2.08
T. W. Keilor.		254.1		6.77		19.86
	1	20.8	3.8	.79	8.7	1.80
	2	19.9	3.8	.75	8.6	1.71
Class 16, Sec. 1.	3	20.4	4.0	.81	8.6	1.75
Grade.	4	18.7	3.7	.69	8.9	1.66
Maud.	5	18.4	3.9	.71	8.8	1.61
November 23, 1915.	6	19.5	4.0	.78	8.8	1.71
212.7	7	18.9	4.1	.77	8.7	1.64
Fourth.	8	18.2	3.8	.69	8.4	1.52
Prescott Blanchard.	9	19.6	3.7	.72	8.5	1.66
		174.4		6.71		15.66

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	21.0	3.2	.67	7.9	1.65
	2	21.4	2.9	.62	7.9	1.69
Class 15, Sec. 1.	3	22.1	3.2	.70	8.1	1.79
Grade.	4	21.4	2.9	.62	7.9	1.69
Lily.	5	22.2	2.9	.64	7.9	1.75
November 15, 1915.	6	21.8	2.9	.63	7.8	1.70
194.6	7	22.0	3.0	.66	7.9	1.73
Fifth.	8	21.8	3.0	.65	7.7	1.67
Fowler Bros.	9	21.3	3.6	.76	7.7	1.64
		195.0		5.95		15.31
	1	15.6	4.3	.67	9.1	1.41
	2	15.7	4.1	.64	8.8	1.38
Class 16, Sec. 1.	3	16.4	4.4	.72	8.8	1.44
Grade.	4	15.7	5.0	.78	9.7	1.52
Bessie S.	5	15.4	5.2	.80	8.5	1.30
November 20, 1915.	6	14.6	5.5	.80	9.2	1.34
193.4	7	14.7	4.6	.67	9.2	1.35
Sixth.	8	14.9	3.8	.56	8.5	1.26
Fred S. Black.	9	16.4	3.8	.62	8.5	1.39
		139.4		6.26		12.39
	1	13.1	4.7	.61	8.5	1.11
	2	13.8	4.2	.57	8.4	1.15
Class 16, Sec. 1.	3	14.4	4.6	.66	8.6	1.23
Grade.	4	14.2	5.0	.71	9.4	1.33
Betty.	5	14.5	5.0	.72	8.6	1.24
November 14, 1915.	6	14.4	4.6	.66	8.2	1.18
176.8	7	13.7	4.6	.63	8.5	1.16
Seventh.	8	14.3	4.4	.62	8.6	1.22
Chas. Etter.	9	13.4	4.6	.61	8.4	1.12
		125.8		5.79		10.74
	1	13.7	4.4	.60	8.3	1.13
	2	13.9	4.0	.55	8.1	1.12
Class 16, Sec. 1.	3	14.1	5.6	.78	8.0	1.12
Grade.	4	13.0	4.8	.62	8.6	1.11
Jennie.	5	12.5	3.7	.46	8.6	1.07
November 10, 1915.	6	15.3	4.3	.65	8.3	1.26
175.5	7	14.7	4.8	.70	8.5	1.24
Eighth.	8	14.1	4.2	.59	8.4	1.18
A. McRae & Sons.	9	15.6	5.2	.81	8.3	1.29
		126.9		5.76		10.52
	1	15.4	3.4	.52	8.5	1.30
	2	16.1	3.4	.54	8.2	1.32
Class 16, Sec. 1.	3	15.8	3.4	.53	8.7	1.37
Grade.	4	16.7	3.3	.55	8.1	1.35
Rose	5	16.4	3.3	.54	8.5	1.39
October 15, 1915.	6	17.7	3.3	.58	7.2	1.27
167.9	7	16.8	3.5	.58	8.4	1.41
Ninth.	8	16.8	3.2	.53	8.3	1.39
Courtenay Lusby.	9	18.8	4.2	.79	8.4	1.57
		150.5		5.16		12.35
	1	18.8	4.0	.75	8.1	1.52
	2	12.7	4.1	.52	7.9	1.00
Class 16, Sec. 1.	3	13.5	4.0	.54	8.7	1.17
Grade.	4	13.0	4.0	.52	9.1	1.18
Betsy.	5	13.2	4.0	.52	8.6	1.13
October 14, 1915.	6	13.7	4.0	.54	8.1	1.10
157.4	7	13.1	4.1	.53	8.2	1.07
Tenth.	8	13.0	3.7	.48	8.4	1.09
J. R. Semple.	9	13.9	4.1	.57	8.4	1.16
		124.9		4.97		10.42
	1	15.1	3.3	.49	8.5	1.28
	2	16.1	3.7	.59	8.5	1.36
Class 16, Sec. 1.	3	15.1	3.8	.57	8.5	1.28
Grade.	4	13.9	3.6	.50	8.8	1.22
Molly.	5	14.1	3.4	.48	8.6	1.21
October 2, 1915.	6	13.6	2.6	.35	8.3	1.12
138.5	7	13.7	3.2	.43	8.2	1.12
Eleventh.	8	9.7	2.2	.20	8.2	.79
Geo. M. Holmes.	9	15.0	3.6	.54	8.2	1.23
		126.3		4.15		10.61
	1	9.4	4.2	.39	8.6	.80
	2	9.0	3.6	.32	8.8	.79
Class 16, Sec. 1.	3	9.8	3.9	.38	8.7	.85
Grade.	4	9.8	3.9	.38	8.9	.87
Nell.	5	11.7	3.9	.45	9.0	1.05
September 23, 1915.	6	9.8	4.1	.40	9.1	.89
115.9	7	10.0	4.1	.41	9.3	.93
Twelfth.	8	10.7	3.9	.41	8.7	.93
Roper Bros.	9	8.9	4.6	.40	8.5	.75
		89.1		3.54		7.86

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.	Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids Not Fat.	Lbs. Solids Not Fat.
	1	8.4	4.5	.37	8.8	.73
	2	7.9	4.2	.33	8.2	.64
Class 16, Sec. 1.	3	8.0	4.2	.33	8.8	.70
Grade.	4	8.4	3.8	.31	9.0	.75
Molly.	5	8.2	4.4	.36	9.0	.74
September 3, 1915.	6	9.1	4.8	.43	8.9	.80
106.0	7	8.4	4.8	.40	9.1	.76
Thirteenth.	8	7.7	4.1	.31	8.8	.67
J. R. Semple.	9	8.3	4.8	.39	8.4	.70
		74.4		3.23		6.49
	1	19.2	4.2	.80	8.7	1.67
	2	16.6	3.4	.56	8.2	1.36
Class 16, Sec. 2.	3	17.0	3.5	.59	8.4	1.42
Grade.	4	18.0	2.9	.52	8.7	1.56
Annie.	5	19.2	3.2	.61	8.4	1.61
November 7, 1915.	6	18.2	3.4	.61	8.3	1.51
177.7	7	18.9	3.4	.64	8.0	1.51
First.	8	17.6	3.2	.56	8.3	1.46
W. N. Boomer.	9	17.3	3.5	.60	8.3	1.43
		162.0		5.49		13.53
	1	15.8	3.9	.61	8.9	1.40
	2	16.4	3.6	.59	8.3	1.36
Class 16, Sec. 2.	3	17.	3.5	.59	8.6	1.46
Grade.	4	17.3	3.5	.60	8.6	1.48
Daisy.	5	18.	3.5	.63	8.3	1.49
November 5, 1915.	6	17.6	3.3	.58	8.2	1.44
174.4	7	17.5	3.4	.59	8.5	1.48
Second.	8	18.0	3.6	.64	8.0	1.44
W. N. Boomer.	9	16.8	3.6	.60	8.3	1.39
		154.4		5.43		12.94
	1	13.8	4.4	.60	8.6	1.18
	2	13.4	3.8	.50	8.3	1.11
Class 16, Sec. 2.	3	13.3	4.5	.59	8.7	1.15
Grade.	4	13.2	4.4	.58	8.8	1.16
Pansy.	5	14.0	4.4	.61	8.7	1.21
October 3, 1915.	6	12.7	5.1	.64	8.8	1.11
173.7	7	13.5	5.2	.70	9.3	1.25
Third.	8	13.1	4.3	.56	8.8	1.15
Roper Bros.	9	14.8	5.4	.79	8.4	1.24
		121.8		5.57		10.56
	1	16.	3.5	.56	8.7	1.39
	2	15.6	3.4	.53	8.2	1.27
Class 16, Sec. 2.	3	15.7	3.4	.53	8.6	1.35
Grade.	4	15.5	3.4	.52	8.7	1.34
Daisy.	5	15.5	3.2	.49	8.6	1.33
November 10, 1915.	6	15.6	3.6	.56	8.3	1.29
153.1	7	15.3	3.4	.52	8.7	1.33
Fourth.	8	15.0	3.3	.49	8.4	1.26
Courtenay Lusby.	9	15.2	3.4	.51	8.3	1.26
		139.4		4.71		11.82
	1	19.1	3.4	.64	8.3	1.58
	2	19.1	3.1	.59	8.2	1.56
Class 16, Sec. 3.	3	20.0	3.7	.74	8.2	1.64
Grade.	4	20.2	3.2	.64	8.4	1.69
Ruby.	5	19.0	2.7	.51	8.0	1.52
November 7, 1915.	6	20.7	3.4	.70	7.8	1.61
189.4	7	19.5	3.1	.60	7.8	1.52
First.	8	20.2	3.4	.68	8.2	1.65
Fowler Bros.	9	19.0	4.0	.76	8.3	1.57
		176.8		5.86		14.34
	1	15.5	3.4	.52	7.9	1.22
	2	15.0	3.3	.49	8.0	1.20
Class 16, Sec. 3.	3	15.8	3.9	.61	8.0	1.26
Grade.	4	16.1	3.5	.56	8.4	1.35
Mary.	5	16.0	3.3	.52	7.7	1.23
October 31, 1915.	6	18.1	4.0	.72	7.7	1.39
107.9.	7	15.7	3.5	.54	7.7	1.20
Second.	8	19.0	4.7	.89	7.5	1.42
Fowler Bros.	9	14.3	3.7	.52	7.8	1.12
		145.5		5.37		11.39
	1	12.9	3.3	.42	9.0	1.16
	2	13.4	2.9	.38	8.5	1.13
Class 16, Sec. 3.	2	16.8	4.3	.72	8.6	1.44
Grade.	4	13.7	3.7	.50	8.6	1.17
Hilda 2nd.	5	13.4	2.7	.36	8.3	1.11
November 13, 1915.	6	15.3	3.8	.58	8.4	1.28
157.8	7	14.4	3.6	.51	8.3	1.19
Third.	8	14.4	3.6	.51	8.5	1.22
T. W. Keilor.	9	17.4	5.8	1.00	8.5	1.47
		131.7		4.98		11.17

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	16.2	3.7	.59	8.0	1.29
2	14.8	3.1	.45	8.0	1.18
3	15.	2.9	.43	8.0	1.20
4	15.2	3.1	.47	8.1	1.23
5	14.8	3.5	.51	7.9	1.16
6	16.5	3.9	.64	7.7	1.27
7	16.0	4.0	.64	8.0	1.28
8	15.5	3.6	.55	7.8	1.20
9	15.9	3.4	.54	8.1	1.28
	139.9		4.82		11.09

Class 16, Sec. 3.
Grade.
Emily.
November 15, 1915.
153.5
Fourth.
Samuel Dickie & Son.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	16.4	3.0	.49	8.2	1.34
2	16.0	2.9	.46	7.9	1.26
3	18.2	3.3	.60	8.2	1.49
4	17.0	3.2	.54	8.4	1.42
5	15.5	2.8	.43	8.0	1.24
6	16.2	2.8	.45	8.1	1.31
7	15.8	3.0	.47	7.7	1.21
8	16.3	3.9	.63	8.3	1.35
9	13.5	4.5	.60	8.4	1.13
	144.9		4.67		11.75

Class 16, Sec. 3.
Grade.
Jane.
November 8, 1915.
151.8
Fifth.
Fowler Bros.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	10.4	3.8	.39	8.3	.86
2	11.0	3.7	.40	8.8	.96
3	10.4	3.6	.37	8.8	.91
4	9.3	3.5	.32	8.9	.82
5	10.3	3.9	.40	9.0	.92
6	12.1	5.0	.60	8.8	1.06
7	9.2	3.2	.29	8.4	.77
8	10.9	2.8	.30	8.2	.89
9	10.1	3.5	.35	8.2	.82
	93.7		3.42		8.01

Class 16, Sec. 3.
Grade.
Dickson's 3rd.
November 16, 1915.
109.5
Sixth.
Hugh A. Dickson.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	4.6	5.9	.27	9.0	.41
2	4.6	5.6	.25	8.7	.40
3	5.0	5.7	.29	8.8	.44
4	5.0	5.8	.29	9.1	.45
5	5.0	5.3	.26	8.8	.44
6	5.0	5.4	.27	8.8	.44
7	5.2	5.4	.28	8.6	.44
8	5.3	5.2	.27	8.7	.46
9	5.0	5.6	.28	8.8	.44
	44.7		3.46		3.92

Class 16, Sec. 3.
Grade.
Kitty.
April 15, 1915.
83.2
Seventh.
Chas. Etter.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	15.5	3.7	.57	8.4	1.30
2	15.5	3.6	.55	8.2	1.27
3	16.	3.8	.60	8.5	1.36
4	15.5	3.5	.54	8.7	1.34
5	16.0	3.4	.54	8.3	1.31
6	16.3	3.5	.57	8.3	1.35
7	15.7	3.6	.56	8.2	1.28
8	15.5	3.4	.52	8.3	1.28
9	16.0	3.6	.57	8.3	1.32
	142.0		5.02		11.82

Class 16, Sec. 4.
Grade.
Patty.
November 4, 1915.
160.9
First.
Fowler Bros.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	14.	4.4	.61	9.1	1.27
2	14.4	4.4	.63	8.9	1.28
3	13.7	4.1	.56	8.7	1.19
4	12.5	3.4	.42	8.9	1.11
5	14.5	3.5	.50	8.8	1.27
6	13.1	3.5	.45	8.7	1.13
7	1.39	4.0	.55	8.8	1.22
8	13.4	3.7	.49	8.5	1.14
9	13.6	3.6	.49	8.7	1.18
	123.1		4.70		10.79

Class 16, Sec. 4.
Grade.
Molly.
October 12, 1915.
151.6
Second.
Courtenay Lusby.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	11.7	5.0	.58	8.9	1.04
2	11.0	4.1	.45	8.6	.95
3	11.8	4.9	.57	8.5	1.00
4	10.8	4.0	.43	9.1	.98
5	9.4	4.4	.41	9.0	.84
6	10.4	3.8	.39	8.8	.91
7	12.6	4.7	.59	8.8	1.10
8	10.8	4.4	.47	8.7	.93
9	11.7	5.2	.60	8.7	1.01
	100.2		4.49		8.76

Class 16, Sec. 4.
Grade.
Dickson's 1st.
November 18, 1915.
138.3
Third.
Hugh A. Dickson.

Milking.	Lbs. milk.	Per Cent. Fat.	Lbs. Fat.	Per Cent Solids-Not Fat.	Lbs. Solids-Not Fat.
1	14.6	3.2	.46	8.7	1.27
2	14.5	3.1	.44	8.0	1.16
3	15.3	3.2	.48	8.2	1.25
4	14.5	3.1	.44	8.1	1.17
5	15.7	3.5	.54	7.9	1.24
6	14.6	3.4	.49	7.9	1.15
7	14.0	3.1	.43	7.9	1.10
8	14.5	3.1	.44	7.9	1.14
9	15.3	3.4	.52	8.0	1.22
	133.0		4.24		10.70

Class 16, Sec. 4.
Grade.
Ann
November 4, 1915.
138.1
Fourth.
T. W. Keilor.

Explanation of Terms:—Class and Section, Breed, Cow's Name, Date of last Calving, Total Score, Award, Owner's Name.

1	13.9	3.4	.47	8.6	1.19
2	12.8	3.6	.46	8.3	1.07
3	14.6	3.1	.45	8.5	1.16
4	13.0	3.2	.42	8.6	1.20
5	14.4	3.2	.46	8.3	1.19
6	14.6	3.1	.45	8.3	1.20
7	14.0	3.0	.42	8.3	1.16
8	13.3	3.4	.45	8.4	1.11
9	13.5	3.5	.47	8.3	1.14
	125.2		4.05		10.59

Class 16, Sec. 4.
Grade.
Cadie 2nd.
November 8, 1915.
133.5
Fifth.
Fowler Bros.

1	13.2	3.9	.51	9.0	1.19
2	12.7	3.7	.46	8.4	1.06
3	12.4	3.7	.45	8.3	1.03
4	11.7	3.7	.43	8.4	1.00
5	11.1	3.6	.39	7.9	.84
6	10.7	3.8	.40	8.1	.87
7	10.7	4.2	.44	8.1	.86
8	10.4	3.9	.39	8.0	.82
9	10.5	3.5	.36	8.2	.86
	103.4		3.73		8.53

Class 16, Sec. 4.
Grade.
Molly 2nd.
November 15, 1915.
122.0
Sixth.
W. N. Boomer.

1	9.8	4.6	.45	9.1	.96
2	8.6	4.0	.34	8.7	.74
3	9.9	4.3	.42	8.8	.87
4	9.4	4.0	.37	9.2	.86
5	9.8	4.2	.41	9.0	.88
6	10.1	4.2	.42	8.6	.86
7	9.2	4.4	.40	8.6	.79
8	10.1	4.1	.41	9.0	.90
9	11.4	4.2	.47	8.4	.95
	88.3		3.69		7.71

Class 16, Sec. 4.
Grade.
Dickson's 2nd.
November 18, 1915.
115.3
Seventh.
Hugh A. Dickson.

1	8.9	3.9	.34	9.1	.80
2	9.4	3.7	.34	8.6	.80
3	9.3	4.0	.37	8.9	.82
4	9.8	3.7	.36	8.9	.87
5	9.7	3.6	.34	8.9	.86
6	8.6	3.5	.30	8.9	.76
7	9.4	3.4	.31	8.9	.83
8	10.2	4.0	.40	8.5	.86
9	10.2	4.2	.42	8.2	.83
	85.5		3.18		7.43

Class 16, Sec. 4.
Grade.
Judy 3rd.
October 20, 1915.
102.7
Eighth.
J. R. Semple.

Guernsey Herd Dispersal Sale.

On Thursday, January 6th, 1916, Hugh A. Dickson, of Dixieland Guernsey Farm, Central Onslow, N.S., is dispersing his splendid herd of Guernsey cattle by auction sale. Although Mr. Dickson has been in the business but a few years, he has worked into probably the best producing bunch of Guernseys in Canada, as well as being able to hold his own in the show ring as records at Halifax, Fredericton and Chatham this fall, will tell.

Gipsy of Willow (392) has qualified for A. R. three years consecutively, dropping four calves in 35½ months and making Canadian Guernsey record twice as three and four year old. Beauty's Bell made equally good records, but failed to calve in time to qualify according to regulations for Canadian R. of P. These two cows each made over six hundred lbs. butter in the year. They and ten of their offspring are included in the sale. A daughter of Gipsy of Willow, as three year old, made in three days, 7.5 lbs. fat, or practically 3 lbs. butter per day as three year old at Amherst, at the fair just over.

He is also selling five Yorkshire sows of J. W. Callbeck's breeding. They are in pig to the College Farm boar. They have all dropped one litter and are proven breeders. Also for sale five pure bred Percherons of excellent breeding. Two mares imported from France and their offspring. These mares are of excellent breeding and have won many first prizes at Halifax and Amherst Spring Horse Show.

This sale coming as it does at short course time and easily accessible from the College, offers a good opportunity for farmers to attend, killing two birds with one stone and taking advantage of the reduced rate. Mr. Dickson is donning the King's uniform, so sale is positive. Nine months' credit is offered; a 6% discount for cash.

Catalogues may be obtained by request.

How Records are Computed.

The standing of the respective cows is computed on the following scale: 25 points for each pound of fat; 3 points for each pound of solids not fat; 1 point for each ten days in milk after the first thirty days. Limit ten points.

The cows in the test were milked dry in the presence of the judges at 1 p.m. December 3rd, and the test was concluded at 1 p.m. on December 6th. the percentage of fat in the milk was determined by the Babcock milk tester and the percetnage of solids not fat. by the use of the authorized formula for the purpose.

No cow four years or over shall win first prize that does not produce at the rate of ten pounds of butter per week. or a second or any other prize that does not produce at the rate of 8 pounds of butter per week. No three year old cow shall win a first prize that does not produce at the rate of 9 pounds of butter per week, or a second or any other prize that does not produce at the rate of 7 pounds of butter per week. No heifer two years shall win a first prize that does not produce at the rate of 8 pounds of butter per week, or a second or any other prize that does not prduce at the rate of 6 pounds of butter per week. No heifer one year old shall win first prize that does not produce at the rate of 7 pounds of butter per week, or a second or any other prize that does not produce at the rate of 5 pounds of butter per week.

Prize Winners at the 1915 Maritime Winter Fair

BEEF CATTLE

Class 1—Shorthorns

Steer, 2 years old and under 3 years. 1, Forrest Bros., Amherst; 2, Hazen Etter, Westmorland Pt.

Steer 18 months and under 2 years. —1, Forrest Bros.; 2, Hazen Etter.

Steer 1 year and under 18 months—1, C. H. Angus, Port Howe; 2, Harold Etter, Westmorland Pt.

Steer, under 6 months—1, Geo. M. Holmes.

Cow or heifer 3 years or over.—1 and 5, R. A. Snowball, Chatham; 2, Harold Etter; 3 and 4, J. M. Laird & Son, Kelvin Grove, P.E.I.

Heifer, 2 years and under 3 years.—1 and 3, J. M. Laird & Son; 2, Harold Etter; 4, F. W. Sumner; 5, R. A. Snowball.

Heifer, 18 months and under 2 years. —1, 4 and 5, J. M. Laird & Son; 2 and 3, R. A. Snowball.

Heifer, 1 year old and under 18 months—1, Forrest Bros.; 2, Hazen Etter; 3, Harold Etter; 4, C. H. Angus; 5, H. P. Lawrence, Nappan Sta.

Heifer 6 months and under 1 year.—1, Harold Etter; 2, J. M. Laird & Son. 3, R. A. Snowball.

Heifer, under 6 months—1, Harry Carter, Point de Bute; 2, Harold Etter; 3, J. M. Laird & Son; 4, R. A. Snowball.

Sweepstakes, best animal, any age. —Harold Etter.

Class 2.

Donated by Canadian Shorthorn Breeders' Association.—1, Best pure-bred steer, any age, $10, Forrest Bros.; 2, Best pure-bred heifer, any age, $10, Harold Etter; 3, Best steer sired by Shorthorn bull, $10, Arthur Etter; 4, Best heifer sired by Shorthorn bull, $10, Forrest Bros.; 5, Best Shorthorn cow in dairy test, Walter Boomer.

Class 3.

Donated by M. J. O'Brien, railway contractor, Montreal, Silver Cup for best Shorthorn animal, any age. To be won three times, not necessarily consecutively, before becoming the property of the exhibitor. No animal can win more than one cup. Won in 1909 by C. A. Archibald. Won in 1910 by C. A. Archibald. Won in 1911 by Harold Etter. Won in 1912 by R. A. Snowball. Won in 1913 by Harold Etter. Won in 1914 by R. A. Snowball. Won in 1915 by Harold Etter.

Class 4.

Silver Trophy donated by R. A. Snowball, Chatham, N.B., to be won three times before becoming the property of the exhibitor for best four animals in Class 1, males or females, to be composed as follows: 6 months and under 1 year; 1 year and under 2; 2 years and under 3; and 3 years or over. Won in 1914 by Harold Etter. Won in 1915 by J. M. Laird & Son.

Class 5—Herefords & Aberdeen-Angus

Steer, 2 years and under 3.—1 Edward P. Anderson, Sackville.

Steer 18 months and under 2 years. —1, J. M. Laird & Son.

Steer 1 year and under 18 months.—2, Forrest Bros.

Steer 6 months and under 1 year.—1, Forrest Bros.; 2, Edward P. Anderson.

Steer under 6 months.—1 and 2, Forrest Bros; 3, Edward P. Anderson; 4, J. M. Laird & Son.

Cow or heifer 3 years or over—1, and 3, Forrest Bros.; 2 and 4, J. M. Laird & Son; 5, Wm. O'Brien & Son, Windsor Forks.

Heifer 2 years and under 3 years.—1 and 4, J. M. Laird & Son; 2 and 3, O'Brien & Son.

Heifer 18 months and under 2 years —1, J. M. Laird & Son.

Heifer, 1 year and under 18 months. —1 and 2, J. M. Laird & Son; 3, Wm. O'Brien & Son.

Heifer, 6 months and under 1 year.—1, J. M. Laird & Son; 2 and 3, Wm. O'Brien & Son.

Heifer under 6 months—1, 2 and 5, J. M. Laird & Son; 3 and 4, Wm. O'Brien & Son; 6, B. W. Ralston, Amherst; 7, Edward P. Anderson, Sackville.

Sweepstakes, best animal, any age.—E. P. Anderson.

Class 6—Grades of Any Breed

Steer, 3 years and upwards.—1, Forrest Bros.; 2, C. H. Angus; 4, Harry Carter, Point de Bute; 5 and 6, Wm. Holmes.

Steer, 2 years old and under 3 years. —1, Arthur Etter; 2, Forrest Bros.

Steer, 18 months and under 2 years. —2, Forrest Bros.

Steer 1 year and under 18 months.—1, Forrest Bros.; 2, J. M. Laird & Son; 3, Harold Etter; 4, Hazen Etter; 5, Harry Carter; 6, George B. Etter.

Steer 6 months and under 1 year.—1 and 2, Forrest Bros.; 3, Edward P. Anderson.

Steer under 6 months—1 and 4, Forrest Bros.; 2, Geo. A. Black; 3, Harold Etter; 5, C. H. Angus.

Cow, 3 years old and upwards—1, Forrest Bros.; 2, Wm. Holmes; 3, R. W. and O. A. Coates, Nappan; 4, Harold Etter; 5, B. W. Ralston; 6, Geo. B. Etter.

Heifer 2 years and under 3.—1, Forrest Bros; 2, Arthur Etter; 3, Geo. A. Black; 4, J. M. Laird; 5, Wm. O'Brien & Son; 6, R. W. and O. A. Coates; 7, Hazen Etter.

Heifer 18 months and under 2 years. —1, and 3, Forrest Bros.; 2, Hazen Etter; 4, Wm. O'Brien & Son; 5, Wm. Holmes; 6, Geo. B. Etter.

Heifer 1 year and under 18 months. —1 and 5, Forrest Bros; 2, J. M. Laird & Son; 3, Geo. A. Black; 4, R. W. and O. A. Coates; 6, Harry Carter.

Heifer 6 months and under 1 year.—1, Edward P. Anderson; 2 and 3, Forrest Bros.; 4, R. W. and O. A. Coates; 5, Hazen Etter; 6, Geo. B. Etter.

Heifer under 6 months.—1, Arthur Etter; 2, Forrest Bros; 3 and 5, Wm. O'Brien & Son; 4, Edward P. Anderson; 6, Forrest Bros.

Sweepstakes, best animal, any age.—Forrest Bros.

Class 7.

Dressed Beef Carcases—1 and 2, Forrest Bros.; 3, Wm. Holmes.

Class 8.

Silver Cup donated by W. W. Black for the best animal any age in Class 6 to be won three times, not necessarily consecutively, before becoming the property of the exhibitor. No animal shall win more than one cup. Won in 1911 by Edward P. Anderson. Won in 1912 by Fowler Bros. Won in 1913 by Edward P. Anderson. Won in 1914 by Forrest Bros. Won in 1915 by Forrest Bros.

Class 8A.

Donated by the Massey-Harris Co., Torotno. A plow for the best four animals in Class 6, male or female, comopsed as follows: 6 months and under 1 year; 1 year and under 2; 2 years and under 3; 3 years or over.—Forrest Bros.

Class 9.

Donated by International Harvester Co. of Canada, Ltd. For best beef animal any breed or grade. No. 55 Scuffler.—E. Anderson.

Class 10.

A special prize of $10 in gold for the best animal shown by a person who has not previously been an exhibitor of live stock at the Winter Fair, in classes 1, 5 and 6. No exhibitor can win in more than one class. Sec. 1—F. W. Sumner. Sec. 5—Wm. O'Brien & Son; Sec. 6—R. W. & O. A. Coates.

BREEDING CLASSES

Class 17—Ayrshires.

Heifer 18 months—1, Prescott Blanchard, Truro; 2, McIntyre Bros., Sussex; 3 and 4, A. McRae & Son, Charlottetown.

Heifer 1 year—1, McIntyre Bros.; 2 and 4, Fred S. Black, Amherst; 3, A. McRae & Son.

Best animal, any age—1, Prescott Blanchard.

Class 18—Holsteins

Heifer 18 months—1, Lea & lCark, Victoria, P.E.I.; 2, Logan Bros.; 3, Fowler Bros.; 4, S. Dickie & Son, Onslow.

Heifer 1 year—1 and 3, Logan Bros., Amherst; 2, Lea & Clark; 4, S. Dickie & Sons.

Heifer 6 months—1, Fowler Bros.; 2, S. Dickie & Sons; 3, Lea & Clark; 4, Logan Bros.

Best animal, any age—Lea & Clark.

Class 19—Jerseys

Heifer 18 months—1, 2, 3 and 4, H. S. Pipes & Son, Amherst.

Heifer 1 year—1, 2 and 3, H. S. Pipes & Son; 4, Jas. E. Baker & Son, Barronsfield.

Heifer, 6 months—1 and 2, H. S. Pipes & Son.

Best animal, any age—H. S. Pipes & Son.

Class 20—Guernseys

Heifer 18 months—1 and 2, Roper Bros., Charlottetown; 3, D. G. McKay & Son, Scotsburn; 4, Frank Roper; 5, R. R. Black, Amherst.

Heifer, 1 year—1, D. G. McKay & Son, Scotsburn; 2, Frank Roper; 3, Roper Bros.; 4, D. G. McKay & Son; 5, Hugh A. Dickson, Onslow.

Heifer 6 months—1, Roper Bros.,; 2 and 3, D. G. McKay & Son.

Best animal, any age—Roper Bros.

Class 21—Grades

Heifer 18 monts—1, Fowler Bros.; 2 and 3, R. R. Black; 4, Chas. Etter.

Heifer 1 year—1 and 2, Fowler Bros.; 3, T. W. Keilor, Amherst; 4, Geo. M. Holmes, Amherst.

Heifer, 6 months—1, Chas. Etter; 2, Geo. M. Holmes; 3, Fowler Bros.; 4, T. W. Keilor.

Best animal any age—Fowler Bros.

SHEEP

Leicesters

Ewe, 2 years old or over.—1 and 2, A. Boswall, Sr. Pownal, P.E.I.; 3, John Retson, Truro; 4, Samuel Lane, Pownal.

Ewe, 1 year old and under 2 years—1, 2 and 4, A. Boswall; 3, Samuel Lane.

Ewe lamb—1, 2 and 4, A. Boswall; 3, Samuel Lane.

Yearling wether—1, 3 and 4, A. Boswall; 2, Samuel Lane.

Wether lamb—1, 3 and 4, Samuel Lane; 2, A. Boswall.

Lincolns

Ewe, 2 years old or over—1, Albert Boswall, French Fort; 2 and 3, Ernest Lund, Mt. Hebert, P. E. I.; 4, C. D. Pugsley, River Hebert.

Ewe, 1 year old.—1 and 3, Albert Boswall; 2, C. D. Pugsley; 4, Ernest Lund.

Ewe lamb—1, C. D. Pugsley; 2, 3 and 4, A. Boswall.

Yearling wether—1, C. D. Pugsley; 2, A. Boswall.

Cotswolds

Ewe, 2 years old or over—1 and 3, Chas. Symes, Minudie; 2 and 4, John Tweedy, Ernscliffe, P.E.I.

Ewe, 1 year old and under 2 years—1 and 2, Chas. Symes; 3 and 4, John Tweedy.

Ewe lamb—1, 3 and 4, John Tweedy, 2, Chas. Symes.

Yearling wether—1. John Tweedy.

Cheviots

Ewe, 2 years old or over—1 and 4, Cephas Nunn, Winsloe Road, P.E.I.; 2 and 3, Chas. Symes.

Ewe, 1 year old—1, 2 and 4, Chas. Symes; 3, Cephas Nunn.

Ewe lamb—1 and 2, Cephas Nunn; 3 and 4, Chas. Symes.

Horned Dorsets

Ewe, 2 years old or over—1, 2 and 3, Geo. Boswall, French Fort.

Ewe, 1 year old—1 and 2, Geo. Boswall.

Ewe lamb—1, 2, 3 and 4, Geo. Boswall.

Yearling wether—1, Geo. Boswall.

Southdowns

Ewe, 2 years old or over.—1 and 3, Jas. E. Baker & Sons, Barronsfield; 2 and 4, Oliver Saunders, Winsloe, P.E.I.

Ewe, 1 year and under 2 years.—1 and 3, J. E. Baker & Sons; 2, E. Saunders, Winsloe Road; 4, Oliver Saunders.

Ewe lamb—1 and 3, J. E. Baker & Sous; 2, E. Saunders; 4, Oliver Saunders.

Yearling Wether—1 and 2, Oliver Saunders.

Wether lamb—1, 2 and 4, J. E. Baker & Sons; 3, Oliver Saunders.

Shropshires

Ewe, 2 years old or over—1, Jas. I. Stewart, Amherst Pt.; 2, 3 and 4, Geo. Boswall.

Ewe, 1 year and under 2 years.—1, 2, and 3, Jas. I. Stewart; 4, Geo. Boswall.

Ewe lamb—1 and 4, Geo. Boswall; 2 and 3, Jas. I. Stewart.

Yearling wether—1, Jas. I. Stewart.

Wether lamb—1, 2 and 3, Jas. I. Stewart.

Oxfords

Ewe, 2 years old or over—1 and 4, J. E. Baker & Sons; 2, J. M. Laird & Son; 3, Burder Goodwin.

Ewe, 1 year and under 2 years.—1 and 4, J. E. Baker; 2, J. M. Laird & Son; 3, Burder Goodwin.

Wether lamb—1, Burder Goodwin.

Hampshires

Ewe, 2 years old or over—1, 2, 3 and 4, Cephas Nunn.

Ewe, 1 year and under 2 years.—1 and 4, Cephas Nunn; 2 and 3, Almon Boswall.

Ewe lamb—1, 2, 3 and 4, Cephas Nunn.

Yearling wether—1, Almon Boswall; 2, Cephas Nunn.

Wether lamb—1, Cephas Nunn.

Suffolks

Ewe, 2 years old or over.—1, 2 and 4, Albert Boswall, French Fort; 3, Almon Boswall.

Ewe, 1 year and under 2 years.—1 and 2, Almon Boswall; 3, Almon Boswall; 4, Parker Horne, Winsloe.

Ewe lamb—1, 2 and 3, Albert Boswall; 4, Almon Boswall.

Grades or Crosses

Ewe, 2 years old or over.—1, Jas. I. Stewart; 2, Burder Goodwin; 3, Geo. Boswall; 4, Oliver Saunders; 5, E. Saunders; 6, Ernest Laird.

Ewe, 1 year old—1 and 2, Jas. I. Stewart; 3, C. D. Pugsley; 4, E. Saunders; 5, Oliver Saunders; 6, Samuel Lane.

Ewe lamb—1 and 3, Jas. I. Stewart; 2 and 4, Cephas Nunn; 5, Jas. E. Baker & Sons.

Yearling wether—1, Almon Boswall; 2, Oliver Saunders; 3 and 4, A. Boswall Sr.; 5, Samuel Lane.

Wether lamb—1, Jas. I. Stewart; 2, Cephas Nunn; 3, Oliver Saunders; 4, Samuel Lane.

Best animal shown by a person who never previously won a prize at the Winter Fair.—1, Parker Horne; 2, E. Saunders; 3, Ernest Lund.

Dressed Sheep Carcases

Best carcass mutton—1, J. E. Baker & Sons; 2 and 3, Oliver Saunders; 4, Jas. I. Stewart; 5, Cephas Nunn; 6, Samuel Lane.

Best carcass lamb—1 and 4, J. E. Baker & Sons; 2, Oliver Saunders; 3 and 5, Jas. I. Stewart; 6, Cephas Nunn.

Bank of Montreal special for the best four lambs, all of one breed, pure bred—1, Burder Goodwin; 2, Jas. I. Stewart.

Bank of Commerce special for the best three shearling wethers.—1. Oliver Saunders; 2, A. Boswall Sr.

Best pen wether lambs—1, Forty rods wire fence donated by The N. B. Wire Fence Co., Moncton, N.B., Jas. I. Stewart; 2, $10.00 donated by Amherst Hotel, Amherst, Jas. E. Baker & Son; 3, $6.00 donated by the Maritime Farmer, Oliver Saunders; 4, $4.00 donated by the Maritime Farmer, Samuel Lane.

Best pen 1 lamb, yearling and two year old, Royal Bank special—1, Jas. I. Stewart; 2, Jas. E. Baker & Sons.

WOOL PRIZES

Long Wool Lamb (Hogg) Fleece—1, Samuel Lane; 2, Albert Boswall.

Long wool sheep (wether) fleece—1, Samuel Lane; 2, H. Boswall Sr.

Medium wool lamb (Hogg) fleece—1, Albert Boswall; 2, Jas. E. Baker & Sons.

Medium wool sheep (wether) fleece—1 and 2, E. J. Vesey.

Championship

Long wool fleece—1, Samuel Lane.

Medium wool fleece—1, E. J. Vesey.

SWINE

Yorkshires

Barrow, under 6 months—1, J. W. Callbeck, Summerside, P. E. I.

Sow, 9 months and under 15 months.—1 J. W. Callbeck; 2, Chas. Etter.

Sow, 6 months and under 9 months.—1 and 2, J. W. Callbeck; 3, Chas. Etter.

Sow, under 6 months.—1 and 2, J. W. Callbeck.

Tamworths

Barrow, 6 months and under 9 months—1, 2 and 3, Fowler Bros.; 4 and 5, A. McRae & Sons.

Barrow, under 6 months—1, 2 and 3, Fowler Bros.

Sow, 6 months and under 9 months.—1, Fowler Bros.; 2 and 3, A. McRae & Sons.

Sow, under 6 months—1 and 2, Fowler.

Berkshires

Barrow, 6 months and under 9 months—1, 2, and 3, Fowler Bros.; 4, Jas. I. Stewart; 5, J. R. Simple.

Barrow, under 6 months—1, 2 and 5. Fowler Bros; 3 and 4, Harry Carter.

Sow, 9 months and under 15 months.—1, Peter Brodie, Little York, P.E.I.; 2, J| R. Semple; 3, Jas. I. Stewart.

Sow, 6 months and under 9 months.—1, Peter Brodie; 2, J. I. Stewart; 3, Saxby Semple, Tatamagouche, 4, Fowler Bros.; 5, Samuel Lane.

Sow, under 6 months.—1, Fowler Bros.; 2, Peter Brodie; 3, Saxby Semple; 4, J. R. Semple.

Any Other Variety

Barrow, 6 months and under 9 months—1, 2 and 3, A. H. Boswall.

Barrow, under 6 months.—1 and 2, A. H. Boswall.

Sow, 6 months and under 9 months.—1 and 3, A. H. Boswall; 2, Wallace stead.

Sow, under 6 months.—1, 2 and 3, A. H. Boswall.

Grades of Any Breed

Barrow, 6 months and under 9 months—1, W. N. Boomer; 2, Forrest Bros.; 3, Peter Brodie.

Barrow, under 6 months.—1, Forrest Bros.; 2, W. H. Pope Cook.

Sow, 9 months and under 15 months.—1, Geo. A. Caulback.

Sow, 6 months and under 9 months.—1, W. N. Boomer; 2, Geo. A. Caulback; 3, Forrest Bros.

Sow, under 6 months—1, Geo. A. Caulback; 2, Forrest Bros.; 3, W. H. Pope Cook; 4, Peter Brodie.

SPECIAL

$5.00 Gold—Best animal in Yorkshire class shown by new exhibitor.—1, Wallace Stead.

$5.00 Gold—Best animal in Grade Class, shown by new exhibitor—Saxby Semple.

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Best sow, 9 months and under 15 months—J. R. Semple.

Best sow, 6 months and under 9 months—Jas. I. Stewart.

Best sow, under 6 months—Fowler Bros.

For New Brunswick Exhibitors only.

Best sow, 9 months and under 15 months—Walter Bulmer.

Best sow, 6 months and under 9 months—Charles Etter.

For Prince Edward Island Exhibitors only

Best sow, 9 months and under 15 months—J. W. Callbeck.

Best sow, 6 months and under 9 months—J. W. Callbeck.

Best sow, under 6 months.—Peter Brodie.

Grand Championship

Altas Stock Food, Silver Cup, for best animal, any breed or grade—Won in 1910 and 1911 by W. J. Gibson. Won in 1912 by J. W. Callbeck. Won in 1913 by Peter Brodie. Won in 1914 by Stewart Bros. Won in 1915 by J. W. Callbeck.

Grand Championship Pen

Percy B. Evans Silver Cup—Won in 1911 by A. A. McBeth. Won in 1912 by Stewart Bros. Won in 1913, 1914 and 1915 by J. W. Callbeck, whose property it now becomes.

DRESSED SWINE CARCASES

1, A. H. Boswall; 2, A. McRae & Sons; 3, W. H. Pope Cook; 4, J. W. Callbeck & Son; 5, J. W. Callbeck & Son; 6, Jas. I. Stewart; 7, Forrest Bros.; 8 and 9, Jos. I. Stewart; 10, D. J. Campbell.

LIVE POULTRY

Note:—c, cock; h, hen; r, cockerel; p, pullet.

Anconas—Hillside Poultry Yards, St. John, 1 c, 1 h.

Andalusians—E. B. Chapman, Moncton, 1 c, 1 h, 2 r, 2 p; Geo. McEachern, Moncton, 2 c, 2 h; Jas. G. Dustan, Moncton, 1 r, 1 p; B. W. Ralston, 3 r, 3 p.

Brahma Light—Day Bros., Moncton, 1 c, 1, 2 and 3 h, 1 and 3 r, 2 p.; Henry Leithead, Lyon's Brook, 2 c, 1 p; Chas. Smith, Moncton, 2 r, 3 p.

Brahma, dark—Henry Leithead, 1 c, 1 h, 1 r, 1 p.

Black Spanish, white face—Hillside Poultry yards., 1 r, 1 p.

Campines, golden—J. R. Blanchard, Centreville, 1 and 2 h, 1 r; Louise C. Brown, St. John, 2 r, 1 and 2 p.

Campines, silver—Maritime Poultry Supply Co., Moncton, 1 c, 2 h; L C Brown, 2 c, 1 h, 1 r, 1 p; J. R. Blanchard, 2 r, 2 p.

Cochin, buff—E. C. Griffin, Port Williams, 1 r, Hillside Poultry Yards, 2 r, 1 and 2 p.

Cochin, partridge—Day Bros., 1 and 2 c, h, r and p.

Dorkings, silver grey—Day Bros, 1 c 1 and 2 h; Scott & Warren, St. John, 2 c, 1 r, 2 p; Hillside Poultry Yards, 2 r, 1 p.

Game, black, red—Donald Keith, Stellarton, 1 c, 2 h; Scott & Warren, 1 h, 1 and 2 p.

Game, brown breasted red—1 c, 1 h.

Game, Indian, Cornish and white—C. J. Cock, Central New Annan, 1 c, 2 h, 2 r, 1 and 2 p; Maritime Poultry Supply Co., 2 c, 1 h; Kentville Poultry Yards, Kentville, N.S., 1 r.

Game, Pyle—Donald Keith, 1 r, 2 p; Scott and Warren, 1 p.

Game, Reds, pit—Stanley West, Amherst, 1 c, 1 h, 2 r; Adolphus Tower, Amherst, 2 c, 2 h,1 r, 2 p; Percy Gordon, Westville, 1 p.

Game, A. O. V.—Adolphus Tower, 1 c; Stanley West, 2 and 3 c, 2 and 3 h; Hillside Poultry Yards, 1 r, 1 p.

Hamburgs, black—Maritime Poultry Supply Co., 1 c, 1 h.

Hamburgs, G. P. or S. P.—A. H. Boswall, Little York, P.E.I., 1 and 2 c, 1 and 2 h, 1, 2 and 3 r, 1, 2 and 3 p.

Hamburgs, G. S. or S. S.—John Tweedy, Ernscliffe, P. E. I., 1 and 2 c, 2 h, 1 and 2 r, 1 and 2 p.; Geo. McEachern, 1 h.

Houdans—Kentville Poultry Yards—1 c, 1 h, 1 p; Day Bros., 2 c, 2 h, 1 and 2 r, 2 p.

Leghorns, white, S. C.—Mrs. E. Kyle, Sussex, 1 and 2 c, 2 h; James Odbur, Sunny Brae, N.B.; 3 and 4 c, 1, 3 and 4 h, 1, 2 and 3 r, 3 and 4 p.; Geo. H. Simpson, Amherst, 5 c; Chas. Johnston, North Sydney, 6 c, 5 h, 4, 5 and 6 r, 1, 2 and 5 p.; E. C. Griffin, 6 h; F. B. Chapman, Moncton, 6 p.

Leghorns, white, R. C.—Day Bros., 1 c, 1 h; W. T. Mattinson, Glace Boy, 2 c, 2 r, 2 p; Maritime Poultry Supply Co., 2 h; Scott & Warren, 1 and 2 r, 1 p.

Leghorns, brown S. C.—G. Carter, Halifax, 1 c; Scott and Warren, 2 c, 1 and 2 h; 1 p; Maritime Poultry Supply Co., 2 r; Henry Leithead, 2 p.

Leghorns, brown, R. C.—C. W. Lovett, North Sydney, 1 and 2 c, 2 h, 1 and 2 r, 1 and 2 p; Scott & Warren, 1 h.

Leghorns, Buff, S. C.—Hillside Poultry Yards, 1 c, 3 h, 3 p.; Day Bros, 2 c, 1 and 2 r; W. W. Osborne; New Glasgow, 3 c, 2 h; Maritime Poultry Supply Co., 1 h, 3 r, 1 p; Scott & Warren, 2 p.

Leghorns, silver—Maritime Poultry Supply Co., 1 c, 1 h.

Minorcas, black, S. C.—P. B. Stewart, Moncton, 1 c, 1, 2 and 3 h, 1 and 2 r, 1 and 2 p; Maritime Poultry Supply Co., 2 c.

Minorcas, black, R.C.—Hillside Poultry Yards, 1 c, 1 h, 1 r, 1 p; J. R. Blanchard, 2 r, 2 p.

Langshans, black or white—Chas. H. Smyth, Moncton, 1 and 2 c, 1 and 2 h, 2 r, 1 and 2 p; Robie Morine, Port Williams, 1 r.

Orpingtons, buff, S. C.—R. R. Black, Amherst, 1 c, 1 h, 1 r, 1 and 3 p; C. J. Cock, 2 c, 3 r; Watson Lutz, Moncton, 3 c, 2 r; James F. Duncan, Amherst, 2 h, 2 p.

Orpington, white, A.V.—Watson Lutz, 1 c, 1 h; Maritime Poultry Supply Co., 2 c; C. McCallum, Lyon's Brook, 2 h.

Orpingtons, black, A.V.—Mrs. E. Kyle, 1 c, 1 and 2 h; Kentville Poultry Yards, 1 and 2 r, 1 and 2 p.

Orpingtons, blue—Watson Lutz, 1 c, 1 h, 1 and 2 r, 1 and 2 p; Kentville Poultry Yards, 2 c, 2 h.

Plymouth Rock, barred—Percy Carey, Yarmouth, 1 and 4 c, 6 p; Watson Lutz, 2 c, 1, 2 and 5 h, 2 r; Craig Bros., 3 c, 4 h, 1 r, 1, 2, 3 and 5 p; J. I. Brady, Canning, 5 c, 6 h; Thos. Barrett, Westville, 6 c, 3 and 6 h, 3 r; E. C. Griffin, 4 r; Kentville Poultry Yards, 5 r; Chas. Dalton, Church St., N.S., 4 p.

Plymouth Rock, white—E. E. Freehill, New Glasgow, 1 c, 1 p; Jas. F. Duncan, 2 c, 1 h; Jas. Odbur, 3 c; Watson Lutz, 2 and 3 h, 1 and 3 r, 2 p; Chester Gregory, New Glasgow, 2 r, 3 p.

Plymouth Rock, buff—Wm. Beazley, Halifax, 1 c, 3 h; W. W. Osborne, 1 h, 1 and 2 r, 1 and 2 p; Kentville Poultry Yards, 2 h.

Plymouth Rock, partridge—Chas. Dalton, 1 h, 1 r, 1 p.

Plymouth Rock, Columbian—Chas. Dalton, 1 and 2 h; Maritime Poultry Supply Co., 1 r.

Rhode Island Reds, S. C.—E. C. Griffin, 1 and 3 c, 4 h, 2 r, 1 and 3 p; Mrs. E. Kyle, 2 c, 3 and 5 h, 6 p.; C. W. Lovett, 1 h, 2 and 4 p; W. H. Henry, Shubenacadie, 2 h, 4, 5 and 6 r; Kentville Poultry Yards, 1 r, 5 p; Robie Morin, Port Williams, 3 r.

Rhode Island Reds, R. C.—Geo. H. Seaman, Moncton, 1 and 3 c, 3 h; W. H. Henry, 2 r, 2 p, 1 and 2 r, 1 and 2 p; John Higson, Stellarton, 1 h, 1 p.

Red Caps—Maritime Poultry Supply Co., 1 c, 2 h; Hillside Poultry Yards, 2 c, 1 h; Robie Morine, 1 r, 1 p.

Wyandottes, golden—Mrs. E. Kyle, 1 c, 2 h, 1, 2 and 3 r, 1 and 3 p; E. S. Brown, Pictou, 2 c, 3 h; Samuel Moss,

(Continued on Page 208)

HORTICULTURE.

Growing Potatoes without Potash.

Potatoes are the chief cash crop grown in Maine and the adjoining counties of New Brunswick. It is of first importance for the grower to have what facts are available relative to the likelihood of obtaining a crop in 1916 without the application of potash. Foreseeing the possibility that the fertilizers of 1916 would contain very little, if any, potash, the Maine Agricultural Experiment Station began in 1915 at Aroostook Farm a series of experiments to determine the effect of different amounts of potash. Four different mixtures were used. In each case the fertilizers contained 4 per cent of nitrogen (5 per cent of amomnia), of which one-third was in the form of nitrate of soda, and 8 per cent of available phosphoric acid. The potash varied as follows: On one plot there was none, on another 2 per cent, on another 5 per cent, and on another 8 per cent. The plots were one-half acre each and they were planted in duplicate. The land had been in grass for two years, one year in oats, and the year before that had been in potatoes. No fertilizer had been used since the potato crop of 1911. In each case the fertilizer was applied at the time of planting, at the rate of 1500 pounds per acre. Other than the amount of potash used, all the plots were treated exactly alike.

Throughout the growing season the vines on both the no-potash plots were a distinctly brighter green and had a thriftier look than on the adjoining plots. The difference was so marked that it attracted much attention from visitors at the farm. Although some slight irregularities occurred in the yield from the different plots, the average figures show fairly consistent increases with the increase in potash. The plots without potash yielded 110 barrels, of 302 bushels of merchantable potatoes. The plots with 2 and 5 per cent. potash gave practically the same yields of 116 barrels, or 320 bushels per acre. The 8 per cent potash plots averaged to yield 120 barrels, or 331 bushels per acre. This is an increase of 10 barrels from the 8 per cent plots over the no-potash plots. This amount is undoubtedly large enough to be significant, and to indicate that the potash increases the yield of potatoes in Aroostook county. On the other hand, 110 barrels (302 bushels) per acre is a good yield—considerably above the average, and nearly double the average in the county in 1915. So far as the results of this one year are concerned, they indicate that a profitable yield of potatoes can be obtained on Aroostook soils without the addition of potash for at least one year. In a few farmers' trials made by the various fertilizer companies, in which no exact records were made, satisfactory results were obtained without the use of potash by all of the growers from whom the station has heard. Quite a number of farmers tested mixtures cotnaining varying amounts of nitrogen, phosphoric acid and without potash. The concensus of opinion seems to be that a 5 per cent ammonia and 10 per cent. phosphoric acid gave, on the whole, the best yields. Based upon the reports of these trials, a good many of the fertilizer companies are increasing the amount of phosphoric acid the present year. Fertilizers that normally carried 8 per cent will in 1916 carry 10 per cent. available phosphoric acid. To the writer, this increase in phosphoric acid does not seem to be necessary. Outside of the special fertilizer experimental plots at Aroostook Farm and at Highmoor Farm, the fertilizer to be used in 1916 will carry 5 per cent ammonia (with one-third of the nitrogen in the form of nitrate of soda), 8 per cent available phosphoric acid, and no potash.

Experiments at Massachusetts, however, indicate that available phosphoric acid hastens the development of the plants at the beginning of the season, and that would seem to be borne out

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Some of the signs of worms are: Deranged stomach, furred tongue, belching, variable appetite, increased thirst, acid or heavy breath, nausea, enlarged abdomen, variable bowel action, pale face of leaden tint, bluish rings around eyes, itching of nostrils, languor, irritability, disturbed sleep, grinding of teeth, irregularity of pulse.

If your child is not one of the robust kind, start in to use Dr. True's Elixir, the Family Laxative and Worm Expeller, today. 35c, 50c and $1.00. Advice free. Write me.

Knowlton, Que. Dr. True

by the farmers' expericences cited above where they had compared 10 per cent available phosphoric acid against 8 per cent available phosphoric acid. The fertilizer companies state that the difference in cost between a fertilizer carrying 8 per cent and one carrying 10 per cent available phosphoric acid in 1916 will not exceed $1 per ton. It may be that this added phosphoric acid may be found profitable. Based on the 1915 results at Aroostook Farm, it would not pay any man to buy potash at the present price of $5 per unit, even if it could be obtained. The increase of 10 barrels of potatoes per acre where 8 per cent of potash was used, over where none was used, was worth at harvest about $15. Eight per cent potash, if it could be had, would cost not less than $30 per acre for 1500 pounds of fertilizer, which is twice the value of the increased crop.

For potash liberators the evidence is preponderant in favor of nitrate of soda. There is little evidence that common salt frees any perceptible amount of potash which will become available to the potato crop. Gypsum (calcium sulphate) probably will help render the potash available. A fertilizer carrying 5 per cent of ammonia in which one-third of the pitrogen is in the form of nitrate of soda, and carrying 8 or 10 per cent of available phosphoric acid, will have, theoretically, enough sodium from the sodium nitrate and calcium from the calcium sulphate (gypsum), to liebrate enough potash for a maximum crop of potatoes.

The station, therefore, advises the use of 1500 to 2000 pounds of a fertilizer carrying 5 per cetn of ammonia with one-third of the nitrogen in the form of nitrate of soda, and 8 per cent. or even ten per cent. of availtble phosphoric acid and no potash for 1916. With people who have been getting good results from a fertilizer carrying 4 per cent of amomnia, a 4-10-0 fertilizer would probably prove satisfactory. —Chas. D. Woods, Director Maine Experiment Station, in Maine Farmer.

THE NOVA SCOTIA FRUIT GROWERS' ASSOCIATION WILL MEET IN THE TOWN OF WOLFVILLE ON JANUARY 18th and 20th. PLAN TO ATTEND.

A Progressive P. E. I. Institute.

Palmer Road Institute makes good again. Good breeding and loyal co-operation get the price. Last spring this institute sold the wool co-operatively and got for graded unwashed wool more per lb. than prices then being paid for washed wool.

This live and progressive institute has just sold 1220 lambs to the New England Meat & Wool Co., represented here by Mr. Church. Mr. J. J. McNally and Mr. Roy Silliphant, of Summerside, handled the lambs at the Palmer Road end and pleased everybody.

The institute leads again all other institutes in number sold, prices paid, and amount realized. All lambs 65 lbs and over, 7¼c; fat sheep, 5 cents. Amount realized, $7,215.83. Mr. Jas. Cadigan received $156.54 for lambs. Mrs. Joseph Dunbar's ewes netted him $14.12 in lamb flesh. Mr. Dennis O'Brien sold one lamb for $10.15 and his 17 heads averaged 104 lbs. of $7.45 per single lamb of $15.08 for twins. Mr. Jos. Poirier's lambs also averaged 104 lbs. Mr. Charles Pridham received $20.44 for the lambs of one ewe. Mr. James Gillis received $9.95 for a fat ewe. The Palmer Road Institute bought two weeks ago 12 pure bred Shropshire rams—9 beauties from Mr. Archibald, Truro, N.S., a real good one from Mr. L. H. D. Foster, York, and two from Mr. C. B. Clay, Bridgetown. Another progressive move inaugurated by this institute is the shearing and dipping of the flocks co-operatively. They have already ordered up-to-date clippers for next spering and a couple of men will do the shearing and dipping, besides packing the fleeces in proper shape for grading.

Fifteenth Annual Maritime Winter Fair.

(Continued from Page 187)

On Tuesday evening lectures were delivered in the two lecture rooms.

In Lecture Room No. 1 S. A. Logan acted as chairman and an appreciative audience listened with keen attention to J. H. Grisdale, Director of Experimental Farms, Ottawa, on the subject of "Crop Production in the Maritime Provinces from Live Stock Standpoint,"" and to W. W. Baird, Superintendent of the Experimental Farm, Nappan, on "Opportunities for Beef Production."

In Lecture Room No. 2, A. E. Trites, Salisbury, was chairman and another interested audience listened to an address by W. F. Stephen, Secretary of the Canadian Ayrshire Breeders' Association, on "Cleanliness in the Milk Supply," the substance of which will be found on the Dairy pages of this issue.

Prof. M. Cumming followed with an interesting heart to heart talk on "Some Fertilizer Problems, with Special Reference to the Use of Limestone and Substitutes for Potash." Extracts from his address will be published in the next issue of the Maritime Farmer.

On Wednesday Evening

Hon. M. McKinnon was chairman in Lecture Room No. 1 where an excellent address on "Care and Management of the Dairy Herd," was delivered by E. S. Archibald, Dominion Animal Husbandman. It is needless to say that, as in the past, Prof. Archibald was listened to with keen interest. Prof. Archibald has the confidence of the farmers of the Maritime Provinces and is always sure of a hearty welcome. Our people here have known him since his boyhood. They have followed him in his college career and are proud of his achievements in his work at the N.S.A.C., and although loath to see him leave the Maritime Provinces they were glad when the call came to fill a position where his influence will have a wider sphere of action.

W. W. Hubbard was chairman in Lecture Room No. 2 and Prof. J. M. Trueman, of the N. S. A. C., talked to an appreciative audience on "How Can We Improve our Live Stock with Least Expense and in Shortest Time." Prof. Trueman has had a wide practical experience along this line and no one in Maritime Canada is better qualified to talk on the subject. Sound business principles and profitable returns in dollars and cents underlie the various ideas presented in the discourse. Extracts from this address willbe published in next issue.

Thursday Evening,

the closing evening of the fair, found the audience in the main auditorium with Rev. P. C. Gauthier in a happy mood, dispensing good cheer and presenting to the successful exhibitors the trophies they had won.

There was one function on Wednesday evening that was not on the programme, viz., an impromptu exhibitors' banquet, where, over steaming bowls of cham chowder not a few of the stockmen and judges waxed eloquent. When we last saw J. M. Laird, John Bennett, Jack O'Brien and Judge Fred Cromwell would hold their sides and tears of merriment wolud bedim their eyes when they recalled the witty speeches of the banqueters.

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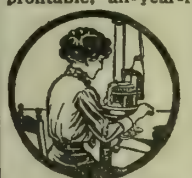

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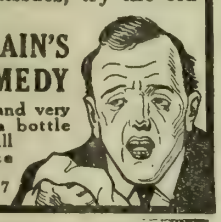

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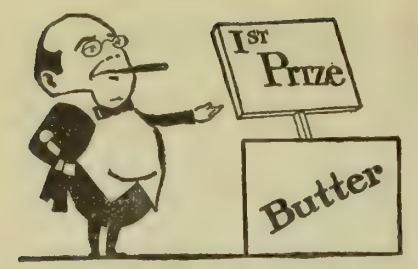

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(Made in Canada) 156

DAIRYING.

Cleanliness in the Milk Supply.

(Address delivered by W. F. Stephen, Huntingdon, Que., Secretary of the Montreal Milk Shippers' Association at the Winter Fair, Amherst, N.S., on Tuesday, December 7th, 1915.)

Fellow Farmers and Dairymen:

A few years ago at the Guelph Winter Fair, a speaker treated, very ably, a subject similar to this. In the outset of his address he referred to the "ideal" and the "real," and while we seldom attained to our "ideal" yet our aim should be to get very near to it. I consider it of foremost importance that we should have an "ideal" in every sphere of life and in attaining to reach that goal we undoubtedly reach a higher plane than if we had no standard before us. Again I believe every community should do all in its power to encourage those who are striving to reach an "ideal," because such ideals always serve to show those less energetic, less enthusiastic, what may be done by those who try. Therefore, every means for supplying the highest "ideal" in the line of producing a high-grade milk and cream should be appreciated by dairymen, factoryman and milkman, and their continuation should be vigorously encouraged by all friends of our great dairy industry. But alas, too frequently we find dairymen at issue with every measure brought forth to better the milk supply. I ask why is this? Is our milk supply, as regards quality, in keeping with the advanced times? I fear not.

Milk, that most palatable, wholesome, nutritious, perfect yet inexpensive diet, it, and its products now so largely consumed by all civilized nations. Is it being produced under the most cleanly and sanitary methods? I fear not. Then, if not, why? Is it through ignorance of its composition, of its susceptibility to contamination, by those engaged in producing it? Is it because of carelessness on the part of the producers, or is it because the dairyman is not sufficiently remunerated for his labors? Possibly all three causes have a part to play in hindering the production of clean, sanitary milk.

Clean Milk—What does this mean? Is not all milk clean milk? It may have been but does not always remain so. I take it, clean milk, is milk taken from healthy cows under the most cleanly conditions to which nothing has been added nor from which anything has been taken away. Such milk contains a comparatively small number of bacteria and if cared for and kept under the most favorable conditions will always be clean milk. But unfortunately, herein is where the trouble begins, as almost as soon as milk is drawn from the cow it becomes a subject of contamination.

I am quite convinced that in the early days of the dairy industry when the work of milking the cows and caring for the milk was all done by women, that a more cleanly product was the outcome, than when this became largely the work of our men, who are not, as a rule, so ready to observe the essentials in cleanliness as are our women, with the result, that as time advanced and fewer women assisted in our farm dairies, undoubtedly there went out to the cheesery and creamery a milk higher in bacterial count.

"Bacteria," we find this mysterious word so frequently associated with milk and its products that we gaze on it with alarm, but as we look at it we find nothing to alarm us further than it has opened up a new field for study, a field unknown to our forebears. To the much ridiculed "scientist" and his wonderful microscope, together with his laboratory work is this revelation due. Bacteria, I will not discuss it, for I am not a bacteriologist, but, we are informed by the highest authorities in that realm, thta from the time the milk is drawn from the cow it is in danger of infection from some species of bacteria which are constantly present in dusty, impure air, in bad water, or unclean utensils, on the hands and clothing of the attendants and milkers, and practically everywhere. Even in pure air certain forms of bacteria that have the power of souring milk are present. Such being the case, it is up to the dairyman to minimize in every way possible the source of contamiantion.

Milk is the most common and most extensively used liquid food of civilized nations. It is consumed by the infant, the invalid, the adult and the aged. In the household economy it takes a prominent place, and is used in the makeup of many wholesome and palatable dishes. Manufactured into butter or cheese its consumption is immense and ever on the increase, while the demand for condensed milk from steamships destined for long voyages, mining and construction camps, in those countries where raw milk cannot be produced advatnageously, and even in our large cities, increases, as its merits become known. Therefore when milk enters so fully into the dietry of our people, why should it not be clean and pure, instead of being contaminated with helath destroying germs, which only get there because of the indifference of the producer, manufacturer or dealer.

Milk Must Receive Special Care

Every up-to-date dairyman and manufacturer knows that the flavor, aroma, texture and keeping qualities of butter are affected by the quality of the milk and cream; that gassy curd in cheesemaking is due to bad milk; that in the condensary no milk is accepted in which there is an undue per cent of acid or milk that is off flavor. In the manufacture of these products alone there is an inestimable loss each year to our dairymen through bad milk, entering itno our products, thus causing a lower grade product to be put upon the market and selling for a lesser price.

I would not have you infer that I assume that all milk produced is unclean milk, nay, far from it, but I do hold that a considerable percentage of the milk delivered to our cheeseries and creameries is not the high class product we would expect from our dairymen in this progressive age. From an exchange I take the following:

"In a recent number of a Bulletin issued by the Chicago School of Sanitary Instruction an inspector describes a certain farm where the barn was well built with high ceilings, plenty of windows, and a cement floor. It was newly whitewashed. The milk house was clean and the milk cans stood in cold running water but the milkers themselves were very dirty and wore dirty clothes. The backs of their hands were covered with dirt but the palms were immaculate, the dirt on them had been washed off by the milk. The milk stools were so dirty that a quarter of a pound of dirt was scraped off the legs of one of them. The milker who was using it said he had never cleaned up before milking or washed his hands before or during the operation, nor had he ever sopnged off the cows' flanks or udders."

Knowing something of the conditions and habits of our dairymen, I am free to say, while this appears overdrawn, yet, on a milder scale, it is simply an illustration of a too-common occurrence on many dairy farms today. The remedy is simple and lies with the dairyman, simply, clean-up and keep clean.

All I have said re production of milk for the cheesery, creamery or condensary, applies to the production of "market" or "commercial" milk, as it is frequently called. Yea, a higher class milk should be suplied for food as the raw milk enters largely into the dietry of infants, children and invalids and customers expect it to be clean and wholesome. Owing to the length of time from 12 to 48 hours between milking and the time it reaches the consumer, there is a great liklihood of its becoming contaminated, it may be clean and pure when it leaves the farm, but in transit, in the vendors' hands and even in the home of the consumer there may be sources of contamination with which it comes in contact that practically unfits it for food.

The demand for clean milk is growing more intense all the time. It may be the buyer is getting as good milk as he pays for. "Certified" milk is the cleanest milk that is on the market: but the cost of production is so great and the sale so limited that it is placed beyond the power of the ordinary dairyman to make it at a profit.

The "pasteurization" of milk for household use is becoming more popular, although the heating of the milk to a temperature of 176 degrees F. somewhat destroys its flavor and makes it a little hard to digest, yet it is safer as a food. It can only be carried on satisfactorily by those firms with large plants.

The "pasteurization" of cream for butter making, as practised in Denmark, may be effectual in counteracting any ill effects from unclean milk, resulting in producing a superior quality of butter.

No dairyman willingly produces unclean milk, but to my mind there are three causes why unclean milk is being produced.

1st—Because of force of habit, (following in the customs of our forebears.) 2nd—Ignorance and indifference to sanitary methods and laws. 3rd—Carelessness on the part of the producers, makers and dealers, in not observing cleanly methods in handling milk. This latter should be considered a crime against society.

Where does the remedy lie? I answer in one word,—Education, to use this word in its broadest sense. It means that much missionary work must be done among the indifferent and careless dairymen before we reach our "Ideal." This missionary work must be educative by giving publicity (through the press and platform) to the evils resulting from unwholesome and unclean milk, the necessity of pure milk, the advantages of pure milk, and the methods to be pursued in order to attain the end sought. This is quite essential in paving the way for the

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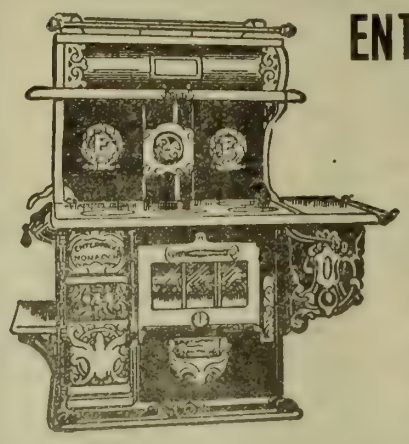
If you do it will pay you to investigate the



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And is moderate in price, costing less than lots of inferior ranges.

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second means which must be authorative and consist in legislative and municipal regulations o govern the milk supply whether produced for the manufacture of butter, cheese, condensed or comercial milk.

The public are clamoring for protection, and are entitled to protection from that which is not conducive to their highest interests. In this respect they apepal to the higher authorities with a measure of success. Today we find nearly all our large cities formulating rules to govern the production, transportation and sale of milk, with a view to improvement, and where these regulations have been reasonable and carried out by capable inspectors the milk supply has been improved in a great measure.

These regulations usually demand that milk be produced from healthy cows, housed in clean, well-lighted, well-ventilated stables, fed wholesome food and p lenty of pure water, the cows kept clean and milked in a cleanly way, the milk taken to the dairy room immediately on being drawn from the cow, areated and cooled to at least 50 degrees F., all utensils coming in contact with the milk kept thoroughly clean, and the milk delivered at the station or factory in the best condition possible.

To meet moderate regulations of the above nature does not require so much of an outlay of capital and labor on the part of the dairyman as we would at first supose, only he may require to put in more windows, install some system of ventilation, do some whitewashing and make a general clean up all round both in stables and barnyard. I know of some very ordinary stables that have been erected some years in which high class milk is being produced by observing these simple rules.

To carry out city regulations one or more inspectors are necessary to occasionally visit the farm dairy to see if the producers is meeting the requirements laid down by the Board of Health, or other authority. These inspectors can do good work if not too officious and are men who understand the conditions under which milk is produced.

The inspector should never allow the producer to feel that he has visited him in the capacity of a spy or a policeman. Our dairymen wil resist the "big stick" every time. The idea of mutual helpfulness should always be encouraged. If the producer can be shown how to produce more milk for less money (which in many instances may be done) all the better; but at least, he should never be left until the inspector feels that he will be glad to see him upon his next visit; unless sure that he is a hopeless case.

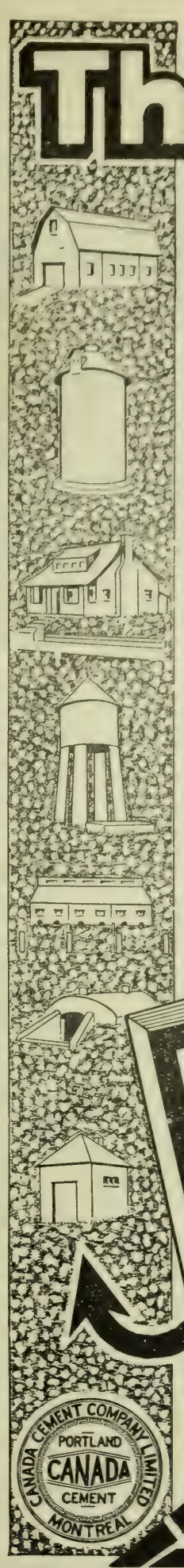
Along this line a writer has said: "Do not expect to get everything at once; remember that the farmer is following the habits of a lifetime and perhaps of many of his ancestors and will have to be shown most tactfully. Show him that his stable and milkroom are kitchens in which he is preparing food ready for the stomachs of infants and invalids; you will then be in a better position to ask him to keep them clean at the time of milking and handling the milk."

I like the sentiment of the above lines from the pen of Dr. Santee, medical expert in charge of market milk investigations for New York state Department of Health. He further says along this line:

"The Board of Health that does not cause a systematic inspection of the dairy farms furnishing milk to its people is falling far short of its whole duty to the babes whose fate may be at its mercy. Experience has shown that to improve a milk supply by regulations alone is a very slow process. Better a campaign of education all along the line from the producer to the consumer. The happiest results follow a well managed conference between health authorities, consumers

(Continued on Page 212)

This Book



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LIVE STOCK.

Administering Medicine to Pigs.

A very successful method is to combine the medicine with the food. This is excellent in minor ailments when medicine is least required, but is practically useless in those cases when it becomes really desirable or necessary. A pig with a skin irritation or eruption that harbors worms, or suffers from some comparatively unimportant ailment which does not affect his appetite, will greedily eat with his food drugs that are not intolerably nasty, and he has no objection to the flavor of salines, like nitrate of potash, Epsom salts, Galuben salts, etc. There are occasions when the nature of the case and the character of the remedies demand administration in a fluid form, but wherever possible medicine should always be given to pigs in the shape of an electuary or paste, and generally a judicious selection of remedies will permit of this method of medication being adopted. There are few drugs required in the medication of the pig that do not lend themselves fairly well to administration in the form of an electuary.

The Electuary

The electuary form of medication possesses the further advantage that in cases of sore throat and cough associated wtih laryngeal irritation, the medicine exercises a local action, and such agents as the nitrate and chlorate of potash, bella donna, and demulcent or soothing remedies may do good in this way. Small quantities of fluid can also be mixed with powders and then made into a paste with treacle. There is one advantage in administering medicines to the pig—he needs no pressure, force or persausion to make him open his mouth. When the mouth is opened in spealing the electuary-laden spatula can be thrust in.

Drenching

Where fluid medication or drenching is considered a necessity the quantity should always be as small as is consistent with the proper dilution of the active drugs; and to reduce the action of irritant agents, such, for example, as turpentine given to expel worms, it is best to employ oil, milk, or demulcent gruel as a vehicle, in preference to water. In drenching a powerful pig, especially if any quantity of fluid has to be administered, it is a good plan to use as a funnel an old boot with the toe cut off. When the pig opens his mouth to protest, as he is certain to do, the boot should be thrust in and the medicine poured into it from a long-necked bottle. There is much less risk of choking than if the fluid is poured directly into the mouth from bottle or horn. Young pigs are best held for medication by an assistant, who should bestride the animal, gripping the shoulders with the knees or calves and keeping the head steady by holding an ear firmly in each hand, while the principal attends to the administration of the medicine. For a fierce old boar or strong and intractable old sow the best method of securing is a strong cord, furnished with a running noose, passed around the snout, behind the tusks. By this the animal can be drawn up to a ring or post and secured as for ringing or other minor operation. There are special appliances for catching pigs, and for holding them securely when caught, but they are not likely to be found, because not often required, on the farm or premises of the average pig-keeper.—Veteran.

W. Clark & Son's New Herd Header.

The Editor, Maritime Farmer,
Sussex, N.B.:
Dear Sir,—

It may be of interest to your Prince Edward Island readers to note the following:

A son of the great Jersey heifer, "Brampton Oakland's Trial" (imp.) 1450, owned by the Central Experimental Farm, Ottawa, whose photo recently appeared in a copy of your paper, has recently gone to head the herd of Messrs. W. Clark & Sons, Maple Grove Farm, North Wiltshire, P.E.I. The calf was dropped on February 12, 1915, after the cow had completed an R. O. P. official senior 3-year-old record of 9,082 pounds of milk, 578 pounds of fat in 365 days, with an average butterfat test of 6.36 per cent. This cow made a stable record for her lactation period of 9,674 pounds of milk, 648.1 pounds of fat, average per cent fat 6.7, in 417 days. The sire of this young bull is the herd bull at the Central Experimental Farm, "Brampton Mon Plaisir"—1886,— a son of the famous cow "Aristocratic Fanny" (imp.) which cow has made several official records in Canada, the last one, recently completed, being 11,605 pounds of milk, 527 pounds of fat in 365 days, at 9 years of age.

Live stock breeders in the East are well acquainted with the herd of W. Clark & Sons and of the many splendid records, official and otherwise, which have been made in this herd.

Sincerely yours,
E. S. ARCHIBALD,
Dominion Animal Husbandman.

Pointers for Pig Keepers.

In making selection of a brood sow, choose one which has been thrifty and vigorous in growing. A large body, a deep chest, and strong legs are good points. Do not choose .out the best-lokoing pigs of the litter before they have been weaned, but when they have been weaned and fed for a month or so, then a sow from the litter which shows the greatest improvement will generally be the best for breeding purposes.

It is a bad practice to breed from immature sows. Boars and sows should not be used for breeding until at least eight or ten months old, and can be kept to advantage until they are six or seven years old, and a sow will give the best results from the time she is two years old, provided that she is kept in comfortable condition, and not abused in any way.

Some persons have a notion that the breeding sow should be kept thin or practically half-starved when carrying her young. This is a mistake, for there is no time in a sow's life when she more requires suitable food and good quarters than when she is carrying and nursing her young; she should be kept in fair condition of flesh, given plenty of exercise, with a dry pen and very little bedding.

If a sow has free acess to dry earth, it helps to keep her in good health, so that she will drop well-developed pigs. Never feed a sow heavily for three or four days after farrowing, because the young, not being very strong, do not require so much milk as they will in a few days; if fed heavily, she will make more milk than they can take, and an attack of milk fever or garget is not improbable.

When the pigs are a week old, the sow's daily ration may be increased. In the weaning of pigs the common practice is to let them run a month, but I think six or eight weeks far better. If too soon weaned they are liable to become stunted, and once this happens they never seem to recover what they have lost.

Pigs should never be given more food than they will eat up clean at one time. Some persons give more than this, thinking that, as the pigs will ultimately eat it up, nothing will be wasted; but even a pig will hardly relish the leavings from a previous meal as well as he will a fresh allowance, and the question of palatability is by no means an unimportant one in the profitable feeding of any animal.

Messrs. Lea & Clark, Victoria, P.E.I., butchered a pure bred Holstein male at 13 months of age that dressed 507 lbs. beef and brought $63.00 in cash returns. Good returns for baby beef. Eh, What

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A Real Fence—Not Netting
Strongly made and closely spaced making it a complete barrier against large animals as well as small poultry. Top and bottom wires No. 9—intermediates No. 12 wire—made by the Open Hearth process which time and other tests have proven to be the best. Send for catalog. Ask about our farm and poultry fencing. Agents nearly everywhere. Agents wanted in unassigned territory.
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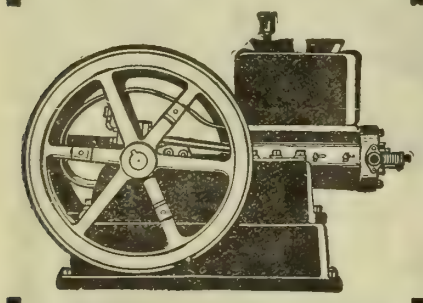

ANYBODY can operate the simple "GOES LIKE SIXTY" Engine. Ready for work the moment you get it. Built strong and solid to last a lifetime. Will give long, unfailing satisfaction. Gas, gasoline or kerosene can be used for fuel.
GILSON QUALITY gives full value for your money—dependable service, great durability, highest economy and perfect satisfaction; freedom from trouble, delays and expense.
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THE "GOES LIKE SIXTY" Line has an engine for every purpose. All styles and sizes from 1 to 40 h. p.
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We pay postage to your address.

We want to encourage our readers to use business-like paper.

The price is just the same as you now pay for plain inferior letter paper at any store.

Send Cash with Order.

The Maritime Farmer,
Sussex, N. B.

COUGHED SO HARD

Would Turn Black In The Face.

SHE WAS CURED BY USING

DR. WOOD'S Norway Pine Syrup.

Mrs. Ernest Adams, Sault Ste. Marie, Ont., writes: "My little girl, six years old, had a dreadful hard cough. At nights she would cough so hard she would get black in the face, and would cough for several hours before she could stop. We tried different kinds of medicines and had several doctors, but failed to do her any good. She could not sleep nor eat her cough was so bad, and she was simply wasting away. A friend advised me to try Dr. Wood's Norway Pine Syrup. I got a bottle and saw an improvement, and got another. Now I am only too glad to recommend it to all mothers."

Too much stress cannot be laid on the fact that a cough or cold should be cured immediately.

Dr. Wood's Norway Pine Syrup will cure the cough or cold and prove a preventative from all throat and lung troubles such as bronchitis, pneumonia and consumption.

"Dr. Wood's" is put up in a yellow wrapper; three pine trees the trade mark; price 25c and 50c, per bottle.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

The Nova Scotia Carriage Company's Carriages and Sleighs.

Synonyms of Quality, Durability and Finish.

That Maritime Province brains, industry and capital can successfully hold their own against the best that Canada can offer in the way of competition, is being pretty satisfatcorily demonstrated by the Nova Scotia Carriage Company, of Amherst.

That this concern was able in 1915 to increase its business twenty-five per cent and has every prospect of piling an even larger increase on top of that in 1916, speaks volumes for the enterprise of that live wire, Mr. W. L. Baker, general manager of the company.

Mr. Baker has been at the helm for two years. He is a native of St. John, N.B., was graduated from Acadia University in 1901, and shortly thereafter entered the service of the Bank of New Brunswick. He was latterly manager at Halifax, and after transferring to the Bank of Nova Scotia, left the realm of wickets and bank bills, to direct the affairs of the most pretentious carriage manufactory in the history of the Maritime Provinces. The outlook at that time was not overinviting. The company was known to be in a very disorganized condition as a result of several misfortunes. A serious accident to the factory building, while nearing completion, combined with other delays, had plunged the business into a state of chaos and inactivity, which resulted in loss of every description, but Mr. Baker tackled his job with earnestness of purpose that foreshadowed eventual triumph over every obstacle. Starting with an uncompleted building and adverse conditions, he has in two years thoroughly equipped a four storey factory, 340'x 60', from which has been shipped nearly 3,000 vehicles of all kinds.

He has inspired his staff with much of his own enthusiasm, and a jealousy for the maintenance of the high standard which the finished product of Nova Scotia Carriages Limited enjoys throughout Canada.

Splendid Facilities

A representattive of the Maritime Farmer was recently accorded the privilege of visiting the plant and was agreeably surprised at the splendid facilities provided for the manufacture of the many itneresting lines which are included in "Nova Scotia Carriages." "Quality, Durability, Finish," an appropriate motto for Nova Scotia carriages, is stamped on every part of this well furnished factory and the system which pervades it.

The wood working departments and its offshoot, the bench room, have no superiors in the whole Dominion, in their comprehensive arrangement. The blacksmith and gear shop is the last word in its adaptability for economic production. The painting, upholstering, assembling, mounting and crating, and shipping departments call for the same high praise. In a word, by coordinating every branch of its splendid system, not a single detail necessary for the production of the highest grades of carriages and sleighs of all classes is overlooked or missing. Thus it is that the management have based their claim that no rival in the carriage business has anything on Nova Scotia carriages, and are enabled to place behind their finished product a guarantee of high quality, based on practical tests, which at once convince the most skeptical that the manufactures of this concern are just what they are represented to be, the best that experienced workmen and carful attention to detail can produce.

The stock room from which supplies for Nova Scotia carriages are drawn, is one of the exclusive sections of the plant. Looked and watched over by a competent expert, it serves out just what is needed for every special line in the long list of the productions of this interesting hive of industry. There is absolutely no waste and therefore no unnecessary added cost for patrons to meet. There are no mistakes made in supplying parts, so that into every carriage and sleigh enters only intended essentials. There can be no costly mistakes of production and from a customer's viewpoint no annoying introduction of something that should [illegible] which should appeal to the loyalty of the Maritime Province buyer.

Capable Sales Staff

Thus far the company has confined its attention largely to the Maritime Province trade. It is now reaching out for larger and wider fields. Bill C. Rayworth, the well known and hustling sales manager of the concern, has just returned from an encouraging tour of the west and is enthusiastic over the sales prospects of his goods, in that part of Canada. In Quebec the firm is represented by L. Duhamel, formerly of Ottawa, an experienced carriage manufacturer and until quite recently manufacturer to His Royal Highness, The Duke of Connaught. Assisting Mr. Rayworth in the Maritime Provinces, is Mr. John Kennedy, who needs no introduction to the majority of Maritime Farmer readers.

Behind General Manager Baker and this capable staff of sales agents, which by the way is to be presently added to, are a board of directors, which includes some of the foremost business men of Nova Scotia. At the head of the board of directors is Percy C. Black, who is also president of the Amherst Boot and Shoe Company and associated with the conduct of many other large manufacturing undertakings. Mr. D. A. Morrison, another of Amherst's most influential business men, a director of Morrison, Ltd., and a number of other well known firms, is the vice-president.

Under such favorable auspices and with goods of the merit of Nova Scotia Carriages to offer, the future of Nova Scotia Carriages Limited may be watched with a solid confidence that it will continue to thrive and that its goods will be even better known with the coming years.

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited

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A vertise in The Maritime Farmer and get results.

"Silage Crops For the Maritime Provinces."

"O. P. V. Ensilage."

A few years ago a number of silos were built in Nova Scotia, with the idea that they could be filled with corn, and that this crop would help materially to solve the problem of how to get cheap and succulent feed for cattle during the winter months. In some parts of the province this plan of growing corn and filling silos has worked out fairly well. This is true for the south-western counties, but in the northern and eastern counties corn has proved to be too uncertain a crop to allow it ever to become of great value to the farmer.

In some few localities, oats, peas and vetch have been sown together and put into the silo in the same was as corn. This mixture, called O. P. V. Silage has been tried at the Agricultural College Farm in Truro, for the past two years and has given good results. In the spring of 1914, on May 13th, 5.7 acres were seeded with oats, peas and vetch at the rate of 1½ bus. oats, ¾ bus. peas and ½ bus. of vetch per acre. This was put on good land and yielded an excellent crop. The 5.7 acres gave 65 tons of green feed, or at the rate of 11.4 tons per acre. This material contained 28.0% of dry matter, which was 8% more than was contained in corn silage grown on the farm the same year.

The O. P. V. crop was cut on August 2nd with a regular mowing machine, and hauled directly to the barn and run through the ensilage cutter into the silo. It was fed out during the winter to cows and young stock and was eagerly eaten by all the cattle.

In 1915 six acres were seeded in the same way as 1914 except that the proportions of seed were changed. The amount used per acre was 2½ bus. oats, 1 bus. of peas, and one-third bus. vetch. Unfortunately, a part of the land on which this was sown was not dry enough to raise a good crop this next season. The yield, however, was about ten tons per acre.

This was cut when the oats were just beginning to enter the dough stage. If cutting is delayed until the oats begin to ripen the mixture will be too bulky for its weight and will not settle closely enough in the silo to make it keep well.

This O. P. V. silage will furnish a large amount of feed per acre and is much relished by the cattle. It helps to solve the serious problem of how to harvest heavy crops of green material in our moist climate. This mixture might well be grown for hay if we were sure of steady dry weather for two weeks at cutting time. Rainy, "catchy" weather, however, makes it practically impossible to cure second growth clover, and such heavy crops as ten tons of oats, peas and vetch.

Those interested in this crop will be able to see it fed to the cows in the College barn during the short course to be held at the Agricultural College, Truro, for January 4th to the 14th next. Balanced rations using the O. P. V. Silage will be figured out as well as other rations using turnip, corn and grain feeds, and their cost and value carefully compared.

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THE HORSE

Young Colt Becomes Fearless if Taught to Obey when First Trained to Harness.

A few days ago, driving a filly that I was breaking to harness I turned into an unaccustomed road and presently came to a place where recent rains had made a broad, shallow pool of water, extending the full width of the road and some fifteen or twenty feet in length.

Miss Filly stopped suddenly; she had no notion of trusting herself to the "dangers of the deep." To be sure, it was only five or six inches deep in the deepest part, but how was she to know that? She had already been taught that ordinary puddles in the road were not bottomless, but this great inland sea was different. To her excited mind it might be a thousand feet deep, with perhaps greater terrors lurking beneath its muddy surface. The demand of her driver that she attempt to cross it was quite too unreasonable to be even considered.

I let her stand a few minutes till her first terror had somewhat abated; then I quietly urged her forward. It was at least a couple of minutes before she finally approached the edge of the pool and very gingerly put one forefoot into it. Then, finding that the water was wet, she jerked her foot back and, with a sudden jump, turned nearly tail about and placed a more satisfactory distance between her position and the bottomless pit.

Again I coaxed her till she again approached the water. This time she put both forefeet into it. Then, just as I noted signs that she was about to repeat her jumping-back performance, I struck her sharply with the whip. She sprang wildly into the air—but forward, as I wished, not backward—landed squarely in the middle of the pool and rushed across it.

After driving a little distance I turned about, drove back to the pool, and crossed and recrossed it till she had not the slightest nervousness about it. Later, during the same drive, she crossed, wtihout any hesitation, a considerable stream whose steep banks and generally forbidding appearance might have alarmed many an older and so-called well-broken horse.

How Bad Habits Start

I have given this detailed description of a very simple occurrence—but which, simple as it was, might have laid the foundation of a bad habit—because I wish you to note carefully what I did and the order of its doing.

First, I showed my filly, with all the gentleness and patience that I could, and there was noting to fear in what seemed to her so terrifying. Then, when she had had ful' opportunity to understand me, I made it clear to her that in any event she must cross it, whether she wished to or not. In other words, that while I sympathized with her fear, and was willing to explain it away, she must nevertheless realize that I was her master and that she must always do my bidding.

Now the way that I managed my filly is the way in which all horses should be accustomed to objects they fear, and constitutes the first and all-important step in making a fearless horse out of a timid one. For, as the horse reasons far more from experience and far less from observation than man, the impression of such a lesson on his mind is not only strong but two fold. It has taught him that that particular object of his fear is harmless; it has also begun the impression—which, as it is not so clearly evident, must be strengthened by repeated similar experiences before it gains much foothold—that the things his master requires of him are all right and will not hurt him.

Accustom Horses to Objects.

Is it necessary then to accustom the horse with equal care and pains to every new object that he fears? Assuredly. And, if, for instance, the next thing that frightens him is a log in the grass by the roadside—which. you may be sure, his excited imagination transforms into some great beast, ready to spring upon him—he must, in exactly the same way, be first shown that it is harmless, and then be made to pass it quietly. It may take quite as long as it did to make him indifferent to the pool of water which at first so terrified him. But do not be discouraged. For after repeated experiences of this kind he will, if handled rightly on every ocacsion, gradually come to have less fear of a new object of terror and his fear will be correspondingly easier to overcome. And thus you finally have a fearless and sensible horse, where at first you had a timid and foolish one.

"Takes patience," do I hear you say? Yes, lots of it, and some other qualities too. But no man of ordinary intelligence, if he believes that good horsemanship is worth while and realizes that self-control is necessary before he asseys the control of animals, need fear that he has not the needful qualifications.

Of no less importance than the horse's conduct when confronted by a terrifying object is his behavior in case of a break-down or other accident. It is not a very desirable animal who kicks or runs away if the harness breaks or the vehicle behind him makes strange noises.

In this respect I have found nothing of such good discipline for the colt as light farm work, such as plowing old ground, harrowing, cultivating, and the like. This accustoms him to the rattling of implements and chains, and the dangling of traces and whiffletrees as nothing else can. It also has a wonderful steadying and civilizing effect. I have frequently heard it said that highly bred colts, of carriage stock, ought not to be put to such work; but this, assuming always that the colt is large enough and strong enough for the task, is sheer nonsense. Of course, care and judgment are always necessary; the work should not be too heavy nor too long continued. An hour a day or, if strong enough, two hours, one in the forenoon and one in the afternoon, is enough. Remember, we are doing it for the good of the colt and not for the work we get out of him.

One of the best illustrations of the value of this kind of training was furnished by a pair of chestnut colts that I raised many years ago. Both were from thoroughbred dams, by a standardbred horse. They were naturally rather nervous, and high-strung, and at the time of which I speak were four and five years old, respectively.

One day we were out driving with these colts, our party consisting of my wife and a girl friend, our four little children and myself.

It happened that my neck yoke was a new one and it had a flaw in it that I did not suspect,as it was concealed by the paint and varnish. Right in the steepest part of a hill it snapped in two in the middle; the pole dropped to the ground, and the carriage, which had no brakes, ran unto the colts.

The colts were startled, of course; but I had no difficulty in soothing them and making them stand quietly, holding back the carriage with their haunches until everyone had got out. Had the colts not been accustomed to farm work and dangling whiffletrees around their heels, the case might have been far different. They proved the value of their training. But you had better believe, with those two women and those four little kiddies in the carriage, I was a mighty anxious and unhappy man till I got them out!

I recently had a letter of inquiry from a young woman who stated that she lived on a farm where several colts were raised every year, and that nearly all of them were "unreasonably timid" when first used on the road. And she asked me two questions which fortunately were easy to answer, for I have sometimes thought that young women have a special gift for asking difficult questions.

Why are Animals Timid?

Her questions were, first, "Are horses naturally timid animals?" In this connection she cited the common ues of the horse in war. Second, "Are there breeds or kinds of horses that

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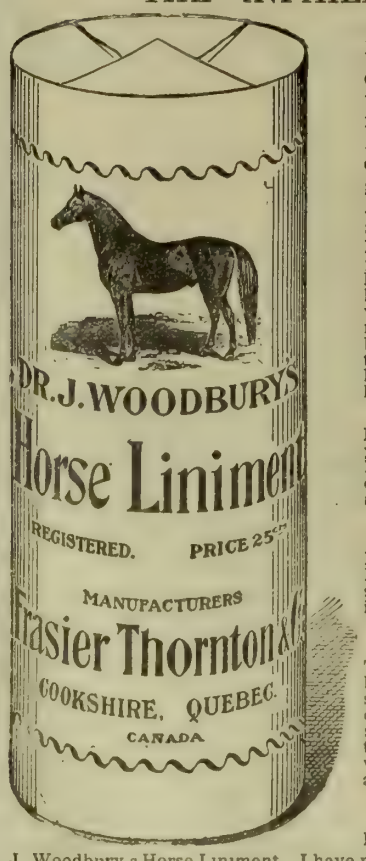

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Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.
Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

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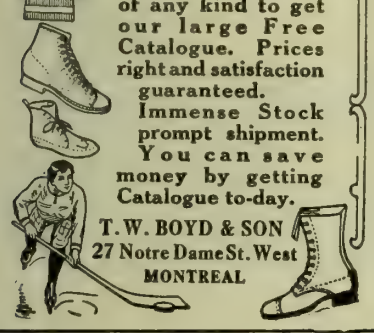

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are more fearless than others; and, if so, what are they?"

To the first: Yes; the horse is by nature a timid animal, as, generally speaking, all animals are to whom Nature has given powers of swift flight as their chief means of self-preservation. Of course individuals differ in this respect, but the rule is so general that it should never be lost sight of in training. That the horse can be trained to war, simply shows the extent to which his natural impulses can be modified and subdued by the art of man.

Second: Breeds of horses do differ in regard to natural timidity. The pure-bred Arab is beyond all comparison the most fearless horse in the world. It is possible that this may be owing in part to the fact that his natural development was for long ages in an open country, where he was not in constant danger from unseen foes, but chiefly, I think, because he is a higher evolutionary type than any other horse.

The small ponies of the far north probably rank next to the Arab in fearlessness. I once bought an Iceland stallion and three mares and bred them for many years. I do not recall that any of them ever showed fear of anything—at least, to any extent worth mentioning. Breaking them to harness and accustoming them to the road was a pastime rather than a task.

The well-bred draft horse is one of our most sensible and level-headed horses, and, as would naturally be expeaced, less subject to unreasoning fear than those of a more nervous and excitable type. In this respect it is well to note that he is a much greater departure from the original type of wild horse, who had always to be on the watch for enemies. So, for instance, a piece of paper blowing in the road is more likely to appear to him what it really is than some wild live thing, ready to strike at his foot like a venomous serpent.

But the draft horse, sensible and reliable as he generally is, sometimes disgraces himself quite unexpectedly; in fact, a colt is a colt, whether of draft stock or otherwise, and too much should not be expected of him. I was once on a city street with a pair of young Percherons that had never shown much fear of things, when a circus parade came along. They paid little attention to the elephants, the band wagons, or even the shrieking and deafening caliope. But presently appeared a lofty and gilded wheeled structure upon the top of which sat a large lion and beside it the Goddess of Liberty as personated by a weary-looking young woman with one arm resting in friendly fashion upon the lions' neck. My colts became insanely frightened, sprang upon the sidewalk in spite of all my efforts, and wrecked, with a glorious and resounding smash, the show window of a department store—a performance much appreciated by the gazing crowd, who were out for excitement and were getting it.

Blinders Reduce Use of Whip

I have often been asked if the use of blinders is not a needless and foolish practice, and if I do not consider it cruel. To both of these questions I answer, no. The purpose of blinders is not to prevent the horse from seeing things and taking fright at them, but to render him pleasanter to drive. Forward, and by merely turning his head sideways he can see about him as well with them as without them; and it is not always desirable to have him see what is going on in the carriage behind him. No, I don't mean what you and Jennie may be doing when you take her out for a drive; I only mean that if he has the least bit of tendency to laziness—and this includes a tremendous number of pretty good horses—he will, if driven without blinders, soon get into the habit of driving with his head carried very slightly on one side, and one eye cocked back into the carriage. If his driver reaches for the whip he will detect the motion at once and quicken his pace and continue as long as the whip is held in the hand; then, when the whip is put back in the socket, he will slacken up in a very provoking way. The majority of horses drive better with blinders than without them. On the other hand, a great many drive just as well without them, and in such cases, especially if the horse has a handsome head, I always prefer the open bridle. So if your house goes well without blinders and you prefer an open bridle, by all means use one; it is, I think, preferable where it works well.

But don't abandon blinders because you think them cruel, for, properly adjusted, they give the horse no discomfort or inconvenience whatever.

It seems almost superfluous for me to add that the colt when being broken to harness should of course always wear an open bridle, whether blinders are used later or not, for he should have every opportunity to become as familiar as possible with all the rigging with which he is surrounded, carriage and revolving wheels included.

I have tried here to explain some of the more important points in making timid horses fearless—an important matter for all who use horses, for unless the horse is at least comparatively fearless he is not safe, and the dangerous horse no one wants.—David Buffum, in Ottawa Valley Journal.

Bonnie Buchlynie, a nine-year-old Clydesdale was recently sold at auction in Scotland, and purchased by a Scottish breeder for $26,250. His sire, Baron Buchlyrie was sold for $47,500.

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

The Messenger Maid

By Helen Wallace.

The mistress of Calderside stood at the high window of her drawingroom, gazing steadily down into the courtyard below. The old house had been built a century before, when, with a French queen upon the throne, French influence was at its height in Scotland, and Calderside might have been modelled from many a Norman chateau, whose steep-pitched, heavily-slated roof and quaint pepper-box tourelles still peep out above the tufted orchards of that pleasant land. It formed two sides of a square, and on the third, across the court, stood a range of stables, from which came a clinking of bridles, a stamping of hoofs, and loud voices and laughter—most unusual, save on some great occasion, for a quiet country-mansion remote in its fields and woods.

But it was no festivity which had filled the stables to overflowing and crowded every corner of the house even to the garrets high up beneath the steep roof. The Laird of Calderside had not, indeed, openly taken part in "the rebellion," that last dying struggle of loyal hearts, which had just been quenched in blood at Culloden. He was shrewdly suspected of Jacobite sympathies though, and half a troop of horse had been quartered on him to overawe the countryside and to watch for stray "rebels," who, with a price upon their heads, were now seeking the coast, in the hope of escaping to France. And the chief prize among these would be young Nigel Maitland, a near kinsman of Lady Calder's. He had been one of the Prince's right-hand men, and it was now believed that he was lurking somewhere in his own neighborhood.

Lady Calder was not consciously hearing the unwonted noises, nor seeing the occasional dragoon who strode across the sunny flags beneath her high window, but both sights and sounds served to heighten the panic anxiety which possessed her. Some words, caught by chance, had left no doubt that the neighboring house of Ledington was to be closely searched, how soon she did not know, the illness of its aged mitress having alone saved it hitherto from more than a cursory inspection.

"We can't wait any longer; the old woman won't recover while there's a Jacobite to smuggle out of the country. She may have a posse of them behind the bed-hangings—Nigel Maitland himself, like enough. Well, we'll have to ask her to change her bed for a day, or rout her out of it," Major Walsh had said with a laugh, and then the door which had been ajar was shut, and Lady Calder had heard no more.

But she had heard enough, and now who was to carry the warning to Ledington—that warning so urgently needed—who? She and her husband were virtually prisoners in their own house—he might soon be a prisoner in reality. She dare not propose to ride to Ledington, nor could she commit such a trust to any of her servants. They were suspect too, and while to the loyal among them it might bring dire trouble, to the waverers it might be too sore a temptation. Yet the message must go, or young Nigel's days were numbered! With clasped hands and unseeing eyes she stood gazing before her, desperate in her helplessness. Those men mounting below might even now be setting forth for Ledington. The warning must go, but how—in God's name, how?

A deep sigh of unbounded satisfaction and relife sounded through the stillness.

"I have finished my sampler, to the very last stitch," said a child's voice, and Lady Calder started an dturned round. In the recess of a window at the further end of the room a child had been sitting, so still that it was no wonder her mother had forgotten her presence. Now she came across the room, a quaint figure, in her long-waisted, long-skirted gown, like a little old woman's, contrasting oddly with the pale, serious child-face round which the dark hair was dressed in heavy falling curls.

In her hand was a square of fine canvas—one of those wonderful "samplers," which their fortunate possessors are nowadays unearthing from the forgotten recesses of old chests and drawers, and which fill one with wonder and pity for the tiny hands which wrought them, and the young eyes which must have pored so closely over them. The one now held up for Lady Calder's inspection was a marvelous example of its kind. Within the scroll-border of "flammi" work, as it was called, the alphabet was repeated again and again in every size and variety of letter. In the centre was a wonderful representation of the old house of Calderside, tourelles, steep roof, crow-stepped gables and all, in the midst of a grove of very Noah's Ark-looking trees, while underenath, in the most delicate, fairy-like stitchery, were the four times.

"Isabel Calder is my name,
Scotland is my nation,
My parents they were very good
To give me education."

Poor little nine-year-old Isabel, her education in life and the world was yet all to come, but she had already been to a hard school, and the dark eyes now lifted to her mother's face may have owed some of their wistfulness to the long hours spent in fashioning these endless A's and B's and C's. But children were not consulted in those days as to their wishes, and as Lady Calder was a conscientious mother, Isabel had been so well brought up that she may never have consciously rebelled against the hours of sewing in summer sunshine or by the dim lamp in the long winter "forenights." Only as she watched her mother's face she heaved again that deep, unchildlike sigh.

Across Lady Calder's face a look flitted, which little Isabel could not read, the look of one who in desperate straits suddenly sees a door of escape open. Then it vanished, and she turned to the child.

"You're a good bairn, Isabel," she said. "You'll be able to mark my new blankets now, and your own, too, some day.

No great reward after such long toil it might seem, but praise, like a caress, was scant in those days, and since things are largely valued for their rarity, Isabel was wholly satisfied with this very moderate tribute. She flushed with pride. She was to be entrusted with a woman's work!

"Would you like to go to Ledington and show your work to your granny-aunt (great-aunt) Maitland?" went on Lady Calder, a veiled eagerness in her tone.

Isabel looked down and shifted from the one foot to the other, but all she said was, "If you'll come with me."

"No," my lassie, I must send you your lone," said her mother, and then dropping on her knee beside the child and putting an arm round her, she went on, "Now, Bell, you must mind what I say, for it's life or death. If you see your granny-aunt alone you're to say to her from me that there must be nobody in Ledington tonight—nobody but those belonging to it," with slow emphasis. The bairn was wise and menseful (thoughtful) for her years, still she was but a bairn; she must not be burdened with a more direct message, thought Lady Calder, looking into the troubled young eyes. After a moment's pause she said, "If there's no chance of that you'll show her your sampler. She'll know fine I wouldn't send you at a time like this only to show off a bairn's work, and she'll be on the look-out. You'll tell her which of the letters you found hardest to do, and you'll point to this and that," swiftly touching one and another: "but you'll let your finger rest a moment on this," pressing hers on a very elaborate G and then passing on to an O. "'Tis a poor device," she sighed, "but I can think of none better, and if Major Walsh or any other one asks why I'm sending you to Ledington, it's to show your sampler—only to show your sampler, Bell," with pieous insistence, "They mustn't guess anything else, or it'll but make bad worse."

"They won't," said Isabel, her dark eyes kindling, and her li'tle figure seeming to expand wiih the very might of her resolve. This was a greater thus than the marking of the blankets. "They'll get nothing from me."

"A sharp rap at the door stopped the words on her lips. It was immediately followed by the entrance of a smart, middle-aged soldier.

"Your pardon, my lady, by I thought Calder was here," he said in a loud, jovial voice.

"No, but I was just about to seek you, Major Walsh. My little lassie here has finished her sampler at last, and nothing will serve her but she must show it to her granny-aunt at Ledington. I expect there was something promised when it was done, eh, Bell?" said Lady Calder, stroking the dark curls." The bairn may go, mayn't she?"

"To Ledington!" said Major Walsh with an odd smile, while the careless bonhomie of his face seemed to stiffen like a mask over some keen purpose beneath. "Well, little maid, come and show me this wonderful work, and we'll see about it."

He took the canvas from Isabel's hand, scanned it closely, front and back, then he thrust it into his pocket with an eye on Lady Calder's face as he did so. But if he looked to read disappointment there, there was no trace of it.

"Those little fingers must be tired after setting so many stitches. They deserve some reward, so I'll e'en take little Miss Bell myself, since she's so set on it, and I'll carry her sampler for her," he said wtih a laugh, "Bring her cloak, and we'll go e'en now."

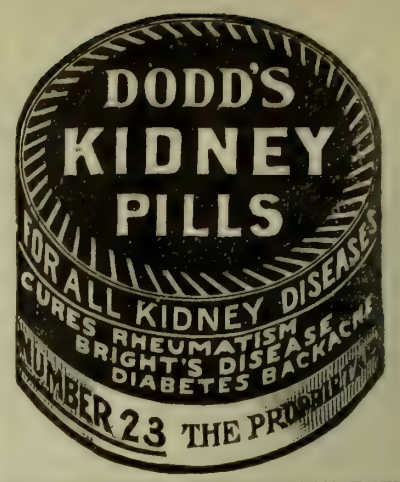
Isabel pressed close to her mother's side. "Must I go with him? I'm—I'm feared of him," she whispered.

"You'll be a brave lass. You're the only one I can trust," breathed her mother, as she tied on the scarlet cloak and drew the hood over the dark curls.

But for all her pride and resolve it was a very white-faced child who was promptly perched up on the front of Major Walsh's saddle. Had she been in the clutches of an ogre she could not have been more terrified, and to her he indeed seemed such. She had heard the story of Culloden, and was not Major Walsh here to hunt to death the few who had escaped from King George's vengeance, and above all that some one who was to "Go" from Ledington. Even her own father was not safe from him. But her Spartan training stood her in good stead. Children must obey they elders, and speak only when they were spoken to, so she answered Major Walsh's questions readily enough, till, looking down into the little snowdrop face, he grew half-ashamed, tough soldier and keen upon his quest as he was, of baiting the child further, and trying to draw from her if she had any subtler errand to the lady of Ledington than the showing of the sampler. He had ensured that no note had been sent with it, and after all they could know nothing fresh of his plans at Calderside.

Arrived at Ledington, he even carried his complaisance so far as to conduct Isabel up the corkscrew stair to my lady's chamber door.

"Here's little Miss from Calderside with something to show to your mis-



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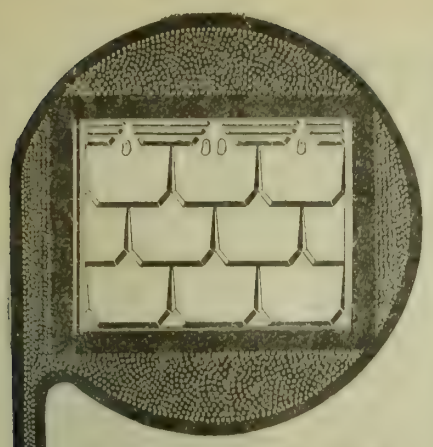

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tress," he said brusquely to the startled waiting-woman. "She can have ten minutes," and he clattered down the steep stair again.

With her heart drumming and her lips tingling from the kiss Major Walsh had exacted in payment, Isabel tip-toed across the big bedroom, with its Dutch hangings of hunting scenes in stamped and gilded leather. In a great four-post bed an old lady was sitting up very erect for an invalid. "So we've got a respite," she said, with a quick, hard breath.

With tremulous steps, Isabel approached the canopied bed, feeling, perhaps, as at that moment she looked, like little Red Riding Hood paying her famous visit, and, indeed, many older than she trembled before the old lady's keen dark eyes looking up from under the multitudinous lawn frills of her mobcap. But the eyes softened at the sight of the child. The sampler was examined and admired, but as soon as the heavy footfalls without had fairly died away, her voice and look changed.

"Quick, child, you've got some message. We've only ten minutes, 'tis a wonder he let us have them. Since you've been trusted with it, I'll trust you too. The one it most concerns had better hear it too."

With her long ebony-handled staff, she rapped sharply on the wainscott thrice in succession. There was a moment's pause, then there came a faint scratching, like a mouse, behind the panels. The old lady rapped again, and Isabel's dilated eyes opened still wider, for the great gilded stag bounding across the wall in front of her suddenly disappeared, leaving a narrow, gaping doorway.

"Oh!" gasped Isabel, and "Oh!" she gasped again, as out of the darkness stepped a tall young man. But Isabel had no longer eyes for the stag, nor any heed for the mystery of the cunningly-hidden door. Her eyes and thought were wholly riveted on the new-comer, and little wonder, for Nigel Maitland was reckoned the "brawest lad" of his time in broad Scotland. It was not the well-cut features though, nor the curling hair, and the handsome eyes, which held the child's gaze, and, all unknown to herself, unsealed within her the fountain of romance. Rather it was the high daring of his look, the glad, gay courage which danced in these fine eyes, so that, worn and wan, and wounded as he was, his entrance from his dark lurking-place seemed to bring a waft of new life, bracing as mountain air, reviving as wine into the big, dull room. Isabel, too young to analyse her own thoughts, gazed open-eyed, the old lady sat more erect among her pillows, her eyes lit up.

"Now, bairn, out with your message!" she said sharply. "I'm trusting you far ,and every minute's a life."

Thus adjured, Isabel repeated her mother's words.

"She said I was to say that there must be nobody in Ledington tonight—nobody but those who belong to it."

The gay, bright eyes were fixed now on her earnest face framed in the scarlet hood. "And did she say why, little lady?" he asked.

"No, but she said it was life or death. I think she's feared of Major Walsh. He's a dreadful man; he brought me here on his saddle"—with a quick shiver—"and he'll have to take me back," her voice sinking.

"Tell your lady-mother she's had a brave little mesenger, and take her my thanks from my heart for her care of my poor life," said Maitland. "And so this is what you were to show your granny-aunt?" picking up the sampler, after a question or two had brought out the whole story.

"Nigel, are ye daft?" cried the old lady from the bed. "He gave us ten minutes. When he comes back he may bring his dragoons with him, and this time I'm doubting I'll no' be let keep my chamber-door fast against him."

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The young man turned on her with a smile.

"Never fear, there'll be 'nobody' in Ledington very soon but those who belong to it; but as my next lurking-place must be the family vault in the kirkyard, you can't wonder I'm in no hurry to seek it. Who knows but it may be my final refuge, unless Sandy Crerar brings his yawl the sooner round St. Abb's Head? No, no, we'll cheat them yet," hastily as the aged face changed woefully at his light words. "And so you are Isabel Calder, and you've done all this wonderful work," reading the doggerel lines as he turned again to the child. "I shall never forget you, Isabel, nor the great service you have done me; and who knows," with a smile, which to Isabel illuminated the room or the world—it was all one then —"who knows but some day I may be able to deliver you from Major Walsh or some other dragon. And now promise, you won't quite forget me."

(Continued in Next Issue.)

A Substitute Bath Room.

Soon after I completed my college course, my mother's health began to fail, and I went home to care for her.

Our house was an old, rambling farmhouse, without any modern conveniences. These I missed very much; but, most of all, not having a bathroom. I did not want to ask father to fit one up, as I knew money was short.

One day an idea came to me, which seemed to be a solution of my troubles. We had a small room opening off the kitchen. It was originally intended for a milk room, but was now used as a store room. Mother readily gave me permission to do what I wished with it.

The floor, which was a painted one. was scrubbed, and over the spots where the paitn was worn I placed some washable rugs, which I made from an old rag carpet.

A table large enough to hold a wash bowl, pitchers, soap dishes and mugs, was covered with white enamel cloth. tacked securely over the edge, and was made to do duty as a washstand. Back of the table on the wall I tacked another piece of enamel cloth, the full length of the table and high enough to catch any splashes of water. Over this hung an old-fashioned mirror. Beside the table was a towel rack, such as used to come with the old style chamber suites; also, a large covered pail for waste water.

An old bureau held towels and toilet articles. A large packing case, covered with gingham from an old dress and lined with enamel cloth, mad: an excellent hamper for soiled clothes.

I sawed three inches off the legs of a kitchen chair, and thus made it a convenient height to sit in while putting on shoes and stockings, or to bathe the feet.

On one side of the room near the window I placed another mirror and a bracket lamp, so that father and the boys had a place to shave.

Since I can remember, an old tin bathtub had hung in the barn. I took this down and gave it a coat of white paint and enamel on the inside and blue on the outside.

A small table held a one-burner oil stove with a covered dish. This was handy to heat a little water, while the reservoir of the kitchen stove served when we wanted a bath.

Hooks on the doors gave a place to hang clothes.

When I had completed my furnishings, I found that it had cost little more than a dollar—enamel, cloth and white paint and enamel being everything that I had bought.

We all enjoy the room, and only the other day I heard father tell mother that he wondered why they had never thought of fixing it up.—Cora M. Devlin, Mass, in Exchange.

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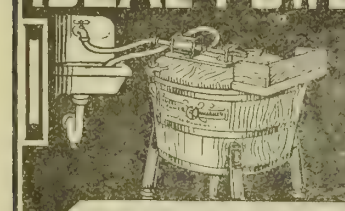

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(Continued from Page 197)

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Wyandottes, buff—Fred Morine, Port Williams, 1 c, 2 h, 1 r, 1 p; Wm. Beazley, 2 c, 2 p; E. S. Brown, 1 h.

Wyandottes, white—Samuel Steeves, Sunny Brae, N. B., 1, 2, and 3 c, 1, 2, and 3 h, 2, 3, and 5 r, 1, 2 and 3 p; Wolfville Poultry Yards, 4 c, 5 p; Kentville Poultry Yards, 5 c, 4 and 5 h, 4 r, 4 p; Maritime Poultry Supply Co., 6 c; Evangeline Poultry Yards, Wolfville, 6 h, 6 r; A. C. Reid, Tidnish, 1 r; Wyandotte Poultry Yards, Amherst, 6 p.

Wyandottes, Columbian—Maritime Poultry Supply Co., 1 c, 1 h; Wolfville Poultry Yards, 1 and 2 r, 1 and 2 p.

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Wyandottes, golden, pair cockerels—1, Mrs. E. Kyle.

Wyandottes, golden, pair pullets—1, Mrs. E. Kyle.

Wyandottes, silver, pair cockerels—1, E. S. Brown; 2 and 3, Mrs. E. Kyle; 4, Owen G. Dauphenee, Bridgewater; 5, Jim Hooper, Truro.

Wyandottes, silver, pair pullets—1 and 2, E. S. Brown; 3, Mrs. E. Kyle.

Wyandottes, buff, pair cockerels—3, Wm. Beazley.

Wyandottes, buff, pair pullets.—2, Wm. Beazley.

Plymouth Rock, Barred, pair cockerels—1, Mrs. E. Kyle; 2, Evangeline Poultry Yards; 3, H. S. Black, Amherst; 4, Craig Bros., Amherst; 5, J. I. Brady.

Plymouth Rock, Barred, pair pullets—1, J. I. Brady; 2, Craig Bros.; 3, Mrs. E, Kyle; 4, H. S. Black; 5, Watson Lutz.

Plymouth Rock, white, pair cockerels—1, J. I. Brady; 2, Spring Park Poultry Yards, Charlottetown.

Plymouth Rock, white, pair pullets—1 and 2, Albert Boswall; 3, Spring Pork Poultry Yards.

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Orpingtons, A. O. V., pullets.—1 Watson Lutz.

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Turkeys, A.O.V. male of 1915.—1, Albert Boswall; 2, C. J. Cock.

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Geese, Toulouse, male of 1915.—1 and 2, Almon Boswall; 3, Edgar Harrison.

Geese, Toulouse, female, 1915.—1, Almon Boswall; 2, Edgar Harrison.

Geese, Bremen or Emden, male over 1 year.—1 and 2, Albert Boswall; 3, G. B. Baker.

Geese, Bremen or Emden, female, over 1 year.—1 and 3, Albert Boswall; 2, G. B. Baker.

Geese, Bremen or Emden, male, 1915.—1 and 2, Albert Boswall; 3, J. H. Logan, Amherst.

Geese, Bremen or Emden, female 1915.—1 and 2, Albert Boswall; 3, J. H. Logan, Amherst.

Geese, African, male over 1 year.—1, John Tweedy; 2, E. C. Griffin.

Geese, African, female, over 1 year.—1, E. C. Griffin; 2, A. Boswall; 3, John Tweedy.

Geese, African, male, 1915.—1, E. C. Griffin; 2, John Tweedy; 3, A. Boswall.

Geese, African, female, 1915.—1, E. C. Griffin; 2, John Tweedy.

Geese, A.O.V., male, over 1 year.—1, C. J. Cock; 2, C. Lusby, Amherst.

Geese, A.O.V., female, over 1 year.—1, C. J. Cock; 2, C. Lusby, Amherst.

Geese, A.O.V., male, 1915.—1, G. B. Baker.

Geese, A.O.V., female, 1915.—1, G. B. Baker.

Ducks, Pekin, male over 1 year.—1, A. Boswall; 2, Spring Park Poultry Yards; 3, John Tweedy.

Ducks, Pekin, female over 1 year—1, Spring Park Poultry Yards; 2 and 3, A. Boswall.

Ducks, Pekin, male, 1915.—1 and 3, A. Boswall; 2, R. Morine.

Ducks, Pekin, female, 1915.—1 and 2, A. Boswall; 3, John Tweedy.

Ducks, Rouen, male, over 1 year.—1, H. S. Black; 2 and 3, Almon Boswall.

Ducks, Rouen, female, over 1 year.—1 and 3, Almon Boswall: 2, A. H. Boswall.

Ducks, Rouen, male, 1915.—1 and 2, Almon Boswall; 3, H. S. Black.

Ducks, Rouen, female, 1915.—1, Almon Boswall; 2, A. H. Boswall; 3, H. S. Black.

Indian Runner, male, over 1 year.—1, Maritime Poultry Supply Co.

Ducks, Indian Runner, female, over 1 year—1, Maritime Poultry Supply Co.; 2, Spring Park Poultry Supply Co.

Ducks, A.O.V.—1, Albert Boswall.

LIVE POULTRY SPECIALS

Canadian Rhode Island Red Cup, provincial Silver Cup for the best collection of Rhode Island Reds.—Won

What Did Little Mary Buy?

1916 Ford Touring Car

FIRST PRIZE

For the Best Reply

$1000.00

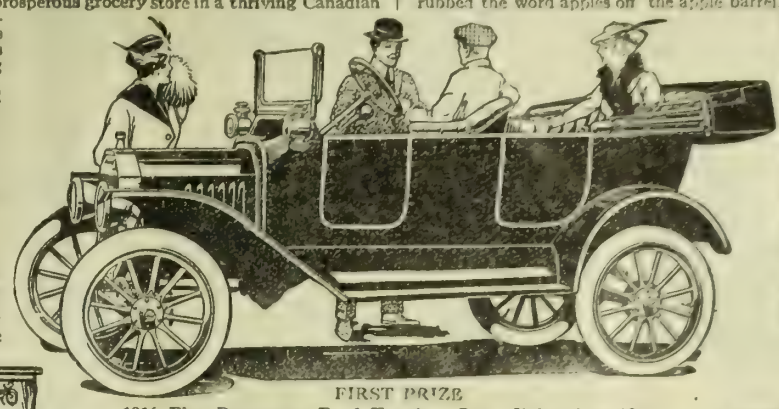
In other Fine Prizes Also Given

JOHN BROWN owns a prosperous grocery store in a thriving Canadian town. He is a live merchant and attributes much of his success to his novel methods of creating interest in his store.

Recently, he took several lines of his regular goods, put them under cover in boxes and barrels, and wrote the name of each article on the outside. Only he mixed up the letters in each name so that instead of spelling the right name of the article, it spelled something different altogether. For instance box 9 contains Raisins, but Mr. Brown jumbled the letters in the words Raisins until they read "Si Rains." Then he rubbed the word apples off the apple barrel, and painted the letters in that name until they read "Plea Pa," as you see on barrel 11.

Fourteen lines of goods in Mr. Brown's store were displayed this way, and a prize was given to any customer who could name an order for all fourteen and tell the number of the box each was in. Little Mary went to Brown's store to make her purchases, guessed all the names correctly and won the prize. Can you do as well?

Two of the names are already given to you to start you right. What are the other twelve?



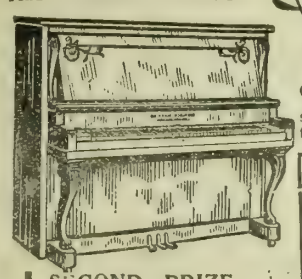
FIRST PRIZE

1916 Five Passenger Ford Touring Car. Value $530.00

CLEVER READERS OF THE MARITIME FARMER sending the best correct or nearest correct sets of answers can share in the distribution of

Thousands of Dollars Worth of MAGNIFICENT PRIZES

including this 1916 Ford Touring Car, $450.00 Upright Piano, $75.00 Columbia Grafonola, $50.00 Clare Bros. High Oven Range, 1916 Cleveland Bicycle, Genuine Singer Sewing Machine, $35.00 Kitchen Cabinet, Genuine Waltham Men's and Ladies' Watches, English Dinner and Tea Sets, Roger's Silverware, and a host of other grand prizes too numerous to mention here. Big Illustrated Prize List will be mailed to you direct.



SECOND PRIZE
Handsome Sherlock-Manning Piano, Value $450.00

4th PRIZE
Clare Bros. Famous High Oven Range

THIS CONTEST IS ABSOLUTELY FREE OF EXPENSE

If your answers gain 120 points you will win First Prize

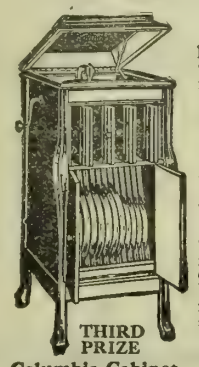
A FEW HINTS.—The goods mentioned under each of the fourteen numbers, are staple lines such as are to be found in every grocery store and in regular use in every home. No trade-mark names or products of any particular firm or manufacturer are given,—just the regular name of each product or article. A good plan is to write down the names of all the things usually found in a grocery store and use the list as your guide. Be careful, because Mr. Brown was clever, and sometimes he made two or three words, and even more out of a name.

The judges will award the prizes in this contest, according to the points gained by each entry, and we will fully advise you of the method, when your answer is received. For instance, 60 points can be gained by sending a correct answer to each of the twelve names you can guess, there are ten points given for general neatness, ten for style, spelling, punctuation, etc., and when you qualify, 40 points additional can be gained. Take lots of time to puzzle out your answer, be neat and careful, and you can win a good prize.

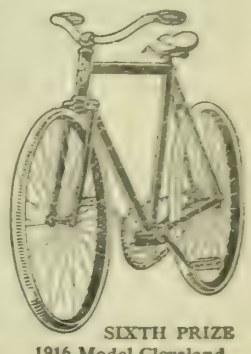
THE OBJECT OF THE CONTEST.—Every loyal Canadian will approve of the object of this great contest. Frankly, it is to advertise and introduce EVERYWOMAN'S WORLD, Canada's greatest magazine, to hundreds of new homes, which should know that a magazine of such excellence and real worth is being published right here in Canada by Canadians for Canadians. You can help us to do this, when you enter the contest, but you do not have to be a subscriber nor are you asked or expected to take the magazine or spend a single penny in order to compete and win the touring car or one of the other magnificent prizes.

EVERYWOMAN'S WORLD is now the established favorite in more than 80,000 of Canada's best homes. Though that is the greatest circulation ever attained by any Canadian magazine, it doesn't satisfy us. Our motto is "Everywoman's World in Everywoman's Home." Hundreds of Canadian homes which may not know it now, will welcome this handsome, interesting, up-to-the-minute magazine, and once it is introduced they will want it every month.

If, therefore, when your answers are received, we find them to have gained sufficient points to merit standing for the judging and awarding of prizes, we will write and tell you so, and send without cost, a sample copy of the latest issue of this greatest of Canada's magazines. Then, in order to qualify your entry, we will ask you to do us the small favor of introducing it to three or four friends and neighbors. We will even send you sample copies to leave with each of your friends, if you will tell us they would like to have them. State your willingness to accord this favor when you submit your answers. The company agrees to pay you in cash, or reward you with a handsome gift for your trouble, entirely in addition to any prize your answers may win in the contest.

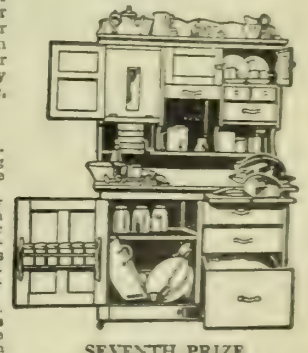


THIRD PRIZE
Columbia Cabinet Grafonola



SIXTH PRIZE
1916 Model Cleveland Bicycle

FIFTH PRIZE
Famous Singer Sewing Machine



SEVENTH PRIZE
Magnificent Ideal Kitchen Cabinet

Follow These Simple Rules Governing Entry to the Contest

1. Write your answers on one side of the paper only, and put your name (stating Mr. Mrs. or Miss) and address on the upper right hand corner. Anything other than the answers and your name and addres, must be on a separate sheet.
2. All letters must be fully prepaid in postage. Do not forget 1c. war tax stamp.
3. Members and employees of Continental Publishing Co., Limited, and of EVERYWOMAN'S WORLD, also their relations and friends are not allowed to compete.
4. Boys or girls under fourteen years of age are not allowed to compete.
5. Contestants will be permitted to submit as many as three sets of answers to the puzzle, but only one set can be awarded a prize.
6. Different members of a family may compete, but only one prize will be awarded in any one family or household.
7. Judging will be done by three Toronto gentlemen, having no connection whatever with this firm. Prizes will be awarded according to the number of points gained on each entry; 120 points, which is the maximum, will take first prize. Points will be awarded for each correct answer, also neatness, handwriting, punctuation, and fulfilling the conditions of the contest. Prizes will be awarded 31st day of March, 1916.
8. Each competitor will be required to show the copy of EVERYWOMAN'S WORLD, which will be sent without charge, to three or four friends or neighbours who will want to subscribe. For this service the company agrees to reward you with a cash payment or a handsome gift. Such rewards to be entirely in addition to any prize your answers may win.
9. This contest is absolutely free of expense. Contestants are not required to be subscribers or readers of EVERYWOMAN'S WORLD, nor are they asked to subscribe or buy anything. In awarding the prizes, the judges will have no knowledge of whether the entry comes from a subscriber or not.

Address your replies to the CONTEST EDITOR, EVERYWOMAN'S WORLD

Continental Publishing Co., Limited, 111 Continental Bldg., Toronto, Ont.

in 1914 by W. H. Henry; won in 1915 by W. H. Henry.

Canadian Rhode Island Red Club ribbons—Best cock, R.C., Geo. H. Seaman; best hen, R.C., John Higson; best cockerel, R.C., Geo. H. Seaman; best pullet, R. C., John Higson; best ccok, S.C., E. C. Griffin; best hen, S. C., C. W. Lovett; best cockerel, S.C., Kentville Poultry Yards; best pullet, S.C., E. C .Griffin.

Silver Cup, donated by E. N. Rhodes for the best two cockerels and two pullets in the live utility class. Won in 1908 and 1909 by Wm. Robertson; won in 1910 by Craig Bros.; won in 1911 and 1912 by A. C. Read; won in 1913 by Watson Lutz; won in 1914 by Jas. F. Duncan; won in 1915 by Samuel Steeves, Sunny Brae, N.B.

Silver Cup, donated by the Kingsdale Poultry Supply Co., fof best male Pylmouth Rock bird—Won in 1912 by Craig Bros.; won in 1913 and 1914 by Watson Lutz; won in 1915 by Percy Carey.

DRESSED POULTRY

Best 2 turkeys of 1915, males—C. J. Cock.

Best 2 turkeys of 1915, females—C. J. Cock.

Best 2 geese, colored—1 and 2, C. J. Cock; 3, W. E. Harding.

Best 2 ducks, white—1, C. J. Cock; 2, Harold S. Black.

Best 2 ducks, colored—1, C. J. Cock; 2, H. S. Black; 3, John R. Harrison.

Best 2 Barred Rock cockerels—1, 2 and 4, C. J. Cock; 3, J. R. Harrison; 5, J. I. Brady.

Best 2 Barred Rock pullets—1, J. R. Harrison; 2, 3 and 4, C. J. Cock.

Best 2 A. O. V. Rock cockerels—1, J. R. Harrison; 2 and 3, C. J. Cock.

Best 2 A. O. V. Rock pullets—1, J. R. Harrison; 2, C. J. Cook.

Best 2 White Wyandotte cockerels—1, 2 and 3, C. J. Cook.

Best 2 White Wyandotte pullets—1 and 2, C. J. Cock.

Best 2 A. O. V. Wyandotte cockerels—1, C. J. Cock.

Best 2 Orpington cockerels—1, 2 and 3, C. J. Cock.

Best 2 Orpington pullets—1, 2 and 3, C. J. Cock.

Best 2 R. I. Red cockerels—1, 2 and 3, C. J. Cock; 4, W. H. Stiles.

Best 2 R. I. Red pullets—1, 2 and 3, C. J. Cock.

Best 2 cockerels, any pure breed, yellow legs—1, 2 and 3, C. J. Cock; 4, J. R. Harrison.

Best 2 pullets, any pure breed, yellow legs—1, 2 and 3, C. J. Cock.

Best 6 chickens of any variety, all of one breed—1 and 2, C. J. Cock; 3, H. S. Black.

Best 2 hens, any pure breed variety, white legs—1, C. J. Cock; 2, W. E. Harding.

Best 2 hens, any pure breed, yellow legs—1, C. J. Cock; 2, J. R. Harrison.

Best 12 chickens packed for export—1 and 3, Henry Clegg; 2, W. H. Stiles; 4, Pope Moy.

Best Exhibit of Dressed Poultry—1, C. J. Cock; 2, John R. Harrison.

Heaviest dozen white eggs—1, C. J. Cock.

Heaviest dozen brown eggs—1, H. S. Black; 2, C. J. Cock.

POULTRY PLUCKING CONTEST

Boys under 15 years.—1, Burpee Canning; 2, Allen Chapman; 3, Aubrey Gould; 4, Alfred Cormier.

Boys over 15 years.—1, Ed. Boneyman; 2, Harold Watson; 3, Robert Bristol; 4, Frank Cook.

Ladies' Judging Contest

Barkers, Ltd., prizes for best judging of dressed poultry by farmers' wives and daughters—English Paramatta Coat, value $12.00, Mrs. C. M. Shipley, East Amherst; suitcase, value $8.00, Mrs. Simon Travers.

Maritime Stock Breeders Association prizes for judging of dressed poultry by members of Amherst Red Cross Society—1st, $8.00, Mrs. Millcoat; 2nd, $7.00, Mrs. Moss.

APIARIAN PRODUCTS

Best dozen jars honey, light—1, W. G. Lodge, Mapleton, N.S.; 2, Craig Bros.; 3, B. W. Baker; 4, Julia A. Corbett.

Best dozen jars honey, medium—1, B. W. Baker, 2, W. G. Lodge; 3, Craig Bros.; 4, Julia A. Corbett.

Best dozen jars honey, dark—1, B. W. Baker; 2, Julia A. Corbett; 3, Craig Bros.

Best dozen sections honey in comb, light—1, B. W. Baker; 2, Craig Bros; 3, Julia A. Corbett.

Best dozen sections honey in comb, medium—1, Craig Bros.; 2, B. W. Baker; 3, Julia A. Corbett.

Best dozen sections honey in comb, dark—1, B. W. Baker.

Best 3 lbs. Beeswax—1, Craig Bros.; 2, W. G. Lodge; 3, B. W. Baker.

SEED DEPARTMENT

Spring wheat, red or white Fife or Marquis.—1, T. Albert Davis, Sussex; 2, John R. Harrison, Maccan; 3, J. E. Harrison, Maccan; 4, E. Lorne Hume, Florenceville, N. B.; 5, Ernest Bulman, Rustico, P.E.I.

Spring wheat, any other variety—1, John R. Harrison, Maccan; 2, J. E. Harrison, Maccan; 3, Henry Gordon, Chatham; 4, Geo. M. Wood, Hazelton, P.E.I.; 5, Frank Dunn, Lr. South River.

Oats, Banner type.—1, Henry Gordon, Chatham; 2, J. W. Stevenson, Gladstone, N.B.; 3, Clarke McFarlane, Fox Harbor; 4, John R. Harrison, Maccan; 5,Ernest Bulman, Rustico, P.E.I.

Oats, any other variety.—1, Henry Gordon, Chatham; 2, John R. Harrison, Maccan; 3, John C. Chisholm, Lr. South River; 4, Richard Creed, Albion, P.E.I.; 5, E. J. Vessey, Little York, P. E. I.

Oats, any black variety—1, J. W. Stevenson, Gladstone, N.B.; 2, E. J. Vessey, Little York, P.E.I.; 3, Cornelius McLellan, Arlington, P.E.I.; Jas. E. Murphy, Augustine Cove, P.E.I.; 5, J. E. Harrison, Maccan.

Barley, 6 rowed variety—1, J. W. Stevenson, Gladstone, N.B.; 2, E. J. Vessey, Little York, P. E. I.; 3, Cornelius McLellan, Arlington, P.E.I.; 4, Jas. E. Murphy, Augustine Cove, P.E. I.; 5, J. E. Harrison, Maccan.

Barley, 2 rowed—1, E. J. Vessey, Little York, P.E.I.; 2, John R. Harrison, Maccan; 3, Geo. M. Wood, Hazelbrook, P.E.I.; Calvin Wood, Southport, P.E.I.; 5, Ernest Bulman, Rustico, P. E.I.

Buckwheat, any smooth variety—1, Harvey B. Parlee, Sussex; 2, Calvin Wood, Southport, P.E.I.; 3, John R. Harrison, Maccan; 4, E. J. Vessey, Little York, P.E.I.

Buckwheat, any rough variety—1. I. W. Stevenson, Gladstone, N.B.; 2, Jas. E. Murphy, Augustine Cove, P.E.I.; 3, Harvey B. Parlee, Sussex; 4, Geo. M. Holmes, Amherst.

Field peas, any large and medium variety.—1, Henry Gordon, Chatham; 2, J. E. Harrison, Maccan; 3, John R. Harrison, Maccan.

Field peas, any small variety—1, Henry Gordon, Chatham; 2, Elie E. Arsenault, Urbanville, P.E.I.

Flax—1, E. J. Vessey, Little York, P. E. I.; 2, John C. Chisholm, Lr. South River; 3, Mrs. Jos. LeClair, Urbanville, P.E.I.; 4, Geo. M. Holmes, Amherst.

Timothy seed—1, John R. Harrison, Maccan; 2, J. E. Harrison, Maccan; 3, J. W. Stevenson, Gladstone, N.B.; 4, John W. Murray, Balmoral Mills.

Clover seed—1, T. Albert Davis, Sussex.

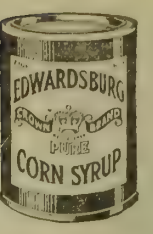
Turnip seed—1, Adolphus Corning, Chegoggin, N.S.; 2, Richard Creed, Albion, P.E.I.; 3, W. H. McGregor, Central Lot 16; 4, Jas. E. Murphy, Augustine Cove, P.E.I.

Field beans, white variety—1, Miss Mabel Harrison, Harrison Road, Maccan; 2, John R. Harrison, Maccan; 3, J. E. Harrison, Maccan; 4, Elie E. Arsenault, Urbanville, P. E. I.

Field beans, colored—1, E. Lorne Hume, Florenceville, P. E. I.; 2, Mrs. Joseph LeClair, Urbanville, P.E.I.; 3, J. E. Harrison, Maccan; 4, John R. Harrison, Maccan.

Potatoes, Carman—1, Jas. Thompson, Cloverville; 2, Peter Brodie, York, P.E.I.; 3, Henry Gordon, Chat-

The Syrup of a Hundred Uses



Of course, "Crown Brand" is your favorite Table Syrup. Of course, you enjoy its delicious, appetizing flavor with *Bread, Pancakes and Hot Biscuits.*

But what about "Crown Brand" in the kitchen? Do you use

EDWARDSBURG "CROWN BRAND" CORN SYRUP

for Gingerbread, Cookies, Cakes, Pies and Sweet Sauces for all kinds of Puddings?
Do you always use it for *Candy-making*?
Try it in all these ways. You'll find "Crown Brand" Corn Syrup handy, convenient, economical, dependable, good.

"LILY WHITE" is just what its name implies—a clear corn syrup—more delicate in flavor than "Crown Brand", that is equally good for the table and for candy-making.

ASK YOUR GROCER—IN 2, 5, 10 AND 20 POUND TINS.

The Canada Starch Co. Limited, Montreal.

Here's Something New!

No more ashes to lug, no clumsy ash pan to spill dust or dirt on the kitchen floor

The GLENWOOD ASH CHUTE Solves the Problem

No dust can escape, just slide the damper once a day and the ashes go directly into the ash barrel.

This is only one of the many exclusive GLENWOOD Features.

Thousands of GLENWOOD Ranges in use daily. Every Range guaranteed. REMEMBER Foundry to Kitchen Prices on GLENWOOD RANGES.

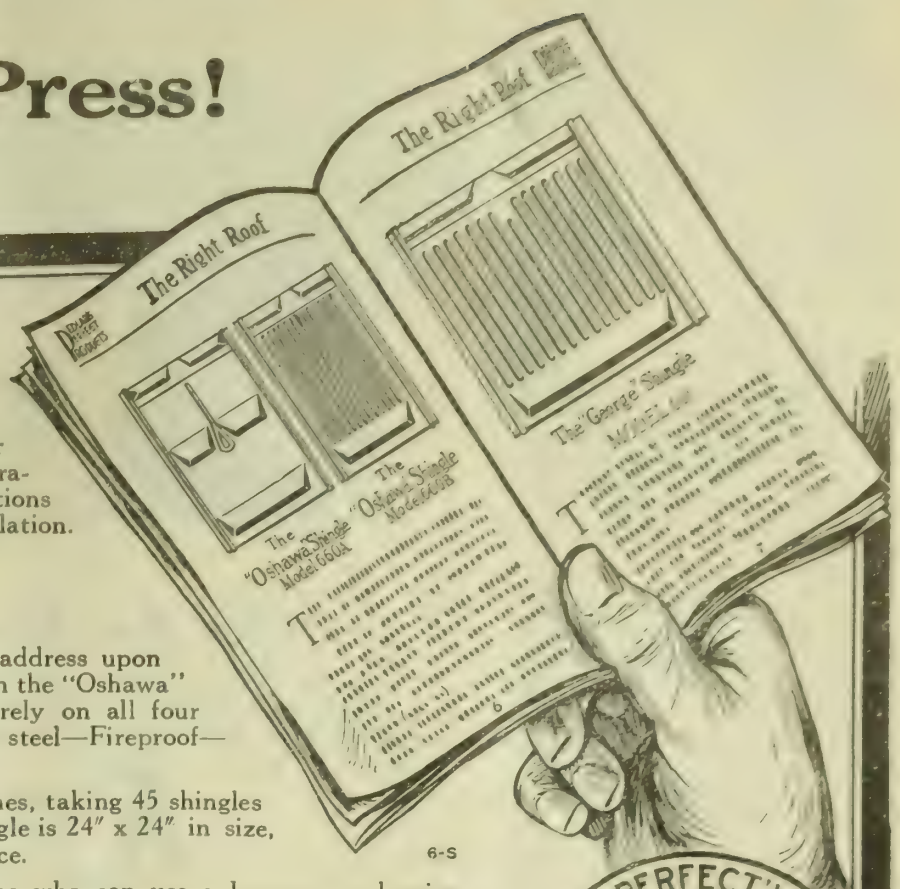
Write for Free GLENWOOD Range Book.

Glenwood Ranges and Heaters

D. J. BARRETT, Kitchen Furnishings

151-155 Union St., ST. JOHN, N. B.

Fresh from the Press!



HERE is a New Book, all about roofing. It tells WHY the roof is the most important part of any barn or building—HOW to protect your barns and dwellings against fire, wind, rain and lightning, and—WHERE the right roofing is sold in your district. It gives full instructions for laying the "Right" Roofing—tells how to build a barn (illustrating the different stages in the construction with reproductions from actual photographs) and contains valuable hints on ventilation. The name of this book is

The RIGHT Roof

You need it NOW. A copy will be mailed, prepaid, to your address upon request. This Illustration shows pages 6 and 7. Here are shown the "Oshawa" and the "George" galvanized steel shingles, which lock securely on all four sides, making a roof that is practically one continuous sheet of steel—Fireproof—Rain-proof—Wind-proof—Lightning-proof.

Each "Oshawa" Shingle has a covering capacity of 16 x 20 inches, taking 45 shingles to the square of 100 feet (10′ x 10′). The big "George" Shingle is 24″ x 24″ in size, and 25 of these big shingles will cover 100 square feet of surface.

6-S

No special tools are required to lay the RIGHT Roof. Anyone who can use a hammer and snips can do the work easily and quickly.

Write TO-DAY for your copy of this valuable book—it's FREE. *Address nearest Branch.*

The PEDLAR PEOPLE, Limited
(Established 1861)
26 Nazareth St., Montreal, Que.
Branches: Ottawa, Toronto, London, Winnipeg.
Executive Office and Factory—Oshawa, Ont.

PEDLAR'S "PERFECT" PRODUCTS
FROM THE PEDLAR PEOPLE LIMITED
OSHAWA, CANADA
MONTREAL-TORONTO-WINNIPEG

ham; 4, J. E. Harrison, Maccan.

Potatoes, Green Mountain or Delaware1, W. H. Pope Cooke, York, P.E.I.; 2, Peter Brodie, York, P.E.I.; 3, E. J. Vessey, Little York, P.E.I.; 4, Henry Gordon, Chatham.

Potatoes, any other white variety—1, W. H. Pope Cooke, York, P. E. I.; 2, E. J. Vessey, Little York, P.E.I.; 3, Henry Gordon, Chatham; 4, Joseph H. Arsenault, Urbanville, P.E.I.

Potatoes, Rose type— , E. J. Vessey, Little York, P.E.I.; 2, John R. Harrison, Maccan; 3, Joseph H. Arsenault. Urbanville, P.E.I.; 4, Frank Locke, Amherst.

Potatoes, any red variety—1, Peter Brodie, York, P.E.I.; 2, W. H. Pope Cooke, York, P.E.I.; 3, E. J. Vessey, Little York, P.E.I.; 4, Henry Gordon, Chatham.

Potatoes, McIntyres—1, E. J. Vessey, Little York, P.E.I.; 2, W. H. Pope Cooke, York, P.E.I.; 3, Frank Locke, Amherst; 4, John R. Harrison, Maccan.

Potatoes, any other dark skinned variety—1, E. J. Vessey, Little York, P. E. I.; 2, Frank Locke, Amherst; 3, Peter Brodie, York, P.E.I.; 4, John Retson, Truro.

Field crops competition, grain grown from prize winning fields:

New Brunswick

Wheat—1, Harvey Parlee, Sussex; 2, Sylvester C. Ricrard, McLeod's Mills, N.B.; 3, E. Lorne Hume, Florenceville, N.B.; 4, Henry Gordon, Chatham; 5, Joseph D. Daigle, McLeod's Mills, N. B.; 6, W. F. Mosher, Sussex; 7, Donald Innes, Tobique River.

Oats—1, Henry Gordon, Chatham; 2, Harvey B. Parlee, Sussex; 3, T. Albert Davis, Sussex; 4, E. Lorne Hume, Florenceville, N.B.; 5, Sylvester O. Richard, McLeod's Mills, N.B.; 6, Joseph D. Daigle, McLeod's Mills, N.B.; 7, Donald Innes, Tobique River; 8, W. E. Palmer, Scotch Lake.

Potatoes—1, P. S. Bremner & Son, Chatham, N.B.; 2, Henry Gordon, Chatham; 3, W. E. Palmer, Scotch Lake; 4, E. Lorne Hume, Florenceville, N.B.; 5, C. Fred Fawcett, Upper Sackville.

Nova Scotia

Wheat—1, R. D. McKay, Balmoral Mills; 2, John R. Harrison, Maccan; 3, Herbert Atkinson, Maccan; 4, V. B. Leonard, Central Clarence; 5, Clark McFarlane, Fox Harbor Pt.; 6, Henry P. Baxter, Addington Forks; 7, W. L. McFarlane, Fox Harbor Pt.; 8, Jas. J. Dunn, Lr. South River.

Oats—1, Pat. J. Hanrahan, Fairmont, Anti. Co., N.S.; 2, John C. Chisholm, Lr. South River; 3, Rev. R. L. McDonald, St. Peters; 4, Owen G. Dauphinee, Bridgewater; 5, Wallace Rhodenizer, Bridegwater; 6, George Burrows, Truro; 7, Albert C. Vernotte, West Northfield; 8, John W. Murray, Balmoral Mills.

Potatoes—1, John R. Harrison, Maccan; 2, Jas. Thompson, Cloverville; 3, Annand Hebb, Hebbville; , Wallace Rhodenizer, Bridgewater; 5, A. W. Hebb, Bridgewater.

Prince Edward Island

Wheat—1, Jas. E. Murray, Augustine Cove, P.E.I.; 2, W. H. McGregor, Central Lot. 16; P. E. I.; 3, Joseph McDonald, Vernon River Bridge, P.E.I.; 4, E. J. Vessey, Little York, P.E.I.; 5, Geo. M. Wood, Hazelbrook, P.E.I.; 6, Ernest Lund, Mt. Herbert, P.E.I.; 7, A. J. Hynes, Cherry Valley, P.E.I.

Oats—1, E. J. Vessey, Little York, P. E. I.; 2, Ernest Bulman, Rustico, P.E. I.; 3, Edgar G. Giddings, Abney, Lot 64, P.E.I.; 4, Wm. P. Cairns, Vernon River, P.E.I.; 5, Jas. A. E. McDonald, Little Pond, P.E.I.; 6, Albert Schurman, Central Bedeque, P. E. I.

Potatoes—1, E. J. Vessey, Little York, P.E.I.; 2, Albert Schurman, Central Bedeque, P.E.I.; 3, Ernest Bulman, Rustico, P.E.I.; 4, Jas. A. E. McDonald, Little Pond; P.E.I.; 5, Thos. Waugh Valley, P.E.I.

Boy's Turnip Growing Competition—1, Saxby Semple, Tatamagouche; 2, Laurence McKay Ogilvie, Eiderbank; 3, Frank Crow, Old Barnes, N.S.; 4, D. Clarence McKay, Scotsburn.

Wm. Ewing, silver cup for best exhibit seed grain—Won in 1910 by A. E. McLean; won in 1911 by Ernest Bulman; in 1912 by E. J. Vessey; won in 1913 by John R. Harrison; won in 1914 by E. J. Vessey; won in 1915 by John R. Harrison.

Sheaf Exhibits

Spring wheat, Red Fife, White Fife or Marquis—1, J. R. Semple, Tatamagouche; 2, E. U. Harrison, Maccan.

White oats, any variety—1, Peter Brodie, Little York, P.E.I.; 2, E. U. Harrison.

Group Exhibits

Spring wheat, Red Fife, White Fife or Marquis—1, W. L. McFarlane, Fox Harbor; 2, R. D. McKay, Balmoral Mills; 3, E. E. Arsenault, Urbanville, P. E. I.; 4, Donald Innis, Tobique River; 5, John W. Murray, Balmoral Mills.

Spring wheat, A.O.V.—1, Richard Creed, Albion, P.E.I.; 2, Thos. Waugh, Wilmot Valley, P.E.I.; 3, Jas. J. Dunn. Lr. South River, N.S.; 4, T. J. Wigginton, Bridgewater, P.E.I.; 5, Geo. Burrows. Truro.

White oats, any variety—1. W. C. McFarlane; 2, Richard Creed; 3, J. A. McFarlane, Fox Harbor Pt., N.S.; 4, W. E. Palmer, Scotch Lake, N.B.; 5, John A. MacDonald, Maryvale, N.S.

Black oats, any variety—1, Chas. Hastings, Little Shemogue, N.S.; 2, E. E. Arsenault.

Six rowed barley, any variety.—1, W. L. McFarlane; 2, Richard Creed; 3, Thos. Waugh; 4, Jas. J. Dunn.

Peas, any field variety—1, Donald Innis.

Best work done in corn breeding during the year.—1, Manning Chute.

Best Bushel Potatoes from Hand Selected Seed Plot.

Round White Type—1, Peter Brodie; 2. W. E. Palmer; 3, Albert C. Venoit, West Northfield, N.S.; 4, C. Fred Fawcett, Up. Sackville; 5, Wallace Rhodenizer, Bridgewater.

Long white type—1, Peter Brodie: 2, W. E. Palmer; 3, C. Fred Fawcett; 4, Richard Creed.

Rose type—1, Peter Brodie; 2. C. Fred Fawcett.

Any dark skinned type—1, Peter Brodie; 2, H. B. Parlee, Sussex.

Steel Briggs' silver cup for the most creditable showing of not more than three varieties of selected seed—Won in 1910 and 1911 by Robt. McKay, Millsville, N.S.; won in 1912 by W. H. McGregor, Mistouche, P.E.I.; won in 1913 by W. L. McFarlane; won in 1914 by Richard Creed; won in 1915 by W. L. McFarlane.

S. J. Moore silver cup for best selected and best arranged group exhibit of any variety white oats—Won in 1913 and 1914 by John A. McDonald, Maryvale; won in 1915 by W. L. McFarlane.

Special competition for boys and girls.

Wheat, any spring variety—1. J. R. Semple; 2, Clark McFarlane; 3, Miss Jean L. Murray, Balmoral Mills; 4, John McMullin, Georges River.

Oats, any variety—1, Chas. Hastings, Little Shemogues; 2, Edith McFarlane Fox Harbor Point, N.S.; 3, Miss Hazel Wood, Southport, P.E.I.; 4, Lawson Wood, Hazelbrook, P.E.I.

Cleanliness in the Milk Supply.

(Continued from Page 201)

and producers. Such meetings disseminate knowledge, bring about mutual understandings and mutual respect."

While in attendance at the New York State Convention a few years ago I had an interesting conversation with Dr. Santee, and found he was a man of wide experience in these matters and held most reasonable views regarding this milk question. He is a firm believer in sunlight and fresh air in the stable and claims that cleanliness about the cows, stable and person, together with keeping the milk cold after it is drawn from the cow, will do more to insure a pure milk supply than any other measures we may put into practice. He is a great believer also in the covered or small top milk pail citing experiments that he had made showing that with their use in the average stables saves about 90 per cent of the contamination.

It is recognized that much of the contamination of milk takes place during the milking operation especially if the udder is not dampened by a moist cloth. Just here let me quote from an exchange:

"A Western station made an experiment by placing a 4 inch gelatine plate under the cows udder in a clean stable, holding it there for the time it ordinarily takes to milk, a man going through the motions of milking under the following conditions:

1.—Sides, flanks and udder of the cow were dampened with a solution of 4 per cent carbolic acid and there was no bedding in the stall.

2.—Those portions of the cows' body were dampened with soap and water, cut bedding was used in the stall, and dust was raised by the man walking in to milk the cow.

3—No portion of the cow's body was dampened, ordinary bedding was in the stall and the man softened the udder with his hands, dry, thereby setting free all the bacteria on the udder to fall into the milk.

The result of the experiment showed that under conditions 1, the milk contained 3,200 bacteria per c.c; under condition 2, 4,500 per c.c.; and under condition 2, 19,000 per c.c."

This experiment proves how dampening the cows udder before milking decreases the bacteria, and how the ordinary custom of the farmer, "softening" before milking, increases them.

The same may be said of allowing milk to stand in open vessels in the stable or dusty atmosphere. At Cornell Agricultural Experimetn Station, it was found that more than 5,000,000 bacteria fell itno an open milk can when it was exposed seven minutes in a stable in which the air did not contain an excessively large quantity of dust. When the udder and surrounding parts were wiped with a damp cloth, contamination from this source amounted to less than four per cent of what it was when the udder had been carelessly brushed before milking. A fly falling into the milk may introduce as many as 1,000,000 organisms. A cow's hair was found to carry 26,000 bacteria, and a small piece of hay that dropped from the cow's body was found to carry more than 150,000 bacteria.

Realizing the truth of the above it behoves us to pay strict attention to cleanliness in the milking operation.

In conclusion let me draw your attention to five requirements to be observed in the production of clean and pure milk.

1st—The health of the herd and quality of food consumed. An animal that is diseased is likely to give unwholesome milk. For the protection of the health of the herd provide an abundance of fresh air and light. An occasional inspection by a veterinary will do no harm.

The quality of food and water may have an effect on the health of the cows and thus indirectly the value of the product. Special care must be observed to avoid foods that are unwholesome. It is necessary, also, to avoid giving any single food in excessive quantity.

2nd—Cleanliness of the cows and their surroundings. This implies a reasonable degree of scientific cleanliness in the stable.

3rd—This refers to the utensils and their care. They should be constructed in such a way as to make cleaning easy. This demands freedom from sharp corners and cracks, and places that cannot be reached by a brush, which should always be used in preference to a cloth. They should be sterilized or scalded after cleaning and inverted in the sunlight until warted.

4th—This requires cleanliness and good health on the part of the attendants and milkers, milking with clean clothes on, and special attention

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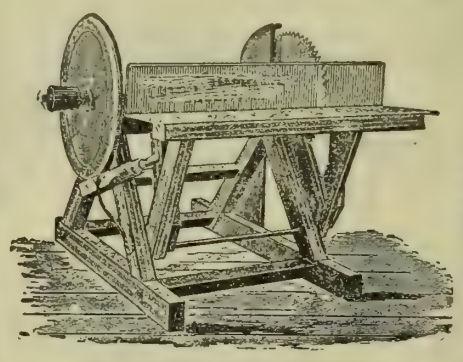

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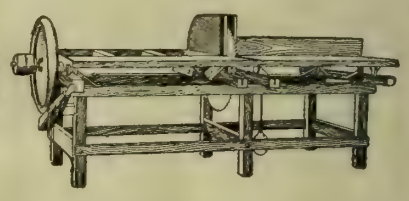

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should be given to the cleanliness of the milkers' hands and to their care to keep the hands dry when milking.

5th—Is the handling of the milk, which means its prompt and efficient cooling, and its storage at low temperature until needed. The accepted limit to which milk should be cooled is 50 degrees F.

Milk produced when the above requirements are observed, even in part, may entail slightly more labor than milk produced under less favorable and wholesome conditions, but it will well repay the cost in a superior article being placed upon the market and will eventually bring a higher price.

Cleanliness and cold are two factors that should be observed by every dairy man as milk produced in a cleanly way will contain fewer germs of contamination if kept cold until used many of these troublesome germs will have an unfavorable field in which to multiply and propogate, and as a result we will have a high class milk with a splendid keeping properties.

A THREE-HORSE EVENER.

The most convenient evener I have ever used is made as follows: Take a piece of iron 5-8- inch thick, two inches wide and 13 inches long. Put a hole in each end and weld links in, links four inches long and give them a quarter twist. For centre haul take one-third the distance between the end holes and weld link in six inches long and give one and a quarter twist. This makes this evener light, handy and complete. Doubletrees for the two horses to be five feet long. Put clevice through middle link to be hitched to whatever you may want to use. To plow or disk harrow, etc., set your evener perpendicular with short end down and put doubletree to lower end and singletree to upper or long end. The middle horse is hitched to the singletree. The evener always hangs level and not like the old-style three-horse evener with the doubletree to one end of a six foot pole.—Arnold Williams.

RUSTING OF IRON

Rusting of iron and steel is natural and unprevetnable, but it can be retarded in its rapidity of formation. On exposure to the weather iron combines with oxygen of the air and rust is formed.

Water (either as liquid or vapor) and oxygen must be present. Rusting is not merely the simple union of iron and oxygen but rust is the result of complex actions between iron, water, substances dissolved in water (as soil, dust, etc.), impurities in the iron, etc. In the changes occurring there are formed small electric currents between particles of the iron and of the other substances and oxide of iron results.

Some substances hasten rusting and others retard it. Those which aid are materials of an acid nature. Some forms of iron do not rust as readily as others. An iron which is worked well in its making and which is comparatively pure is especially resistant to rusting. Substances of an alkaline nature, such as quick lime, soda, potash, often inhibit rusting. A solution of potassium bichromate is especially good.—Raymond Hertwig.

The season of shortened daylight brings it own peculiar fire dangers. One of these is the use of the lantern about farm buildings. Of recent years, owing to competition, a low-priced lantern, which is a serious fire menace, has been placed upon the market. Instead of being securely screwed on the oil reservoir, the burner is simply sliped on, with the result that, if the lantern is upset, the burner comes off and the oil is allowed to run out upon the lighted wick. The result is either an explosion or a serious blaze, and unless speedily checked, damage to life and property.

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Take 2 Tablets at Bedtime and you will arise feeling Refreshed, Bright & Vigorous.

When you feel gloomy and depressed and cannot sleep, suspect your nerves. When you shrink from company and would rather be alone you are losing confidence in yourself, and that can only mean weak nerves. It is not natural to be solitary and unsociable, it shows clearly that vitality has become reduced, and the nervous system correspondingly weakened. But take Dr. Cassell's Tablets for such a condition and you will be astonished at the results, astonished at the bright new health you will gain, at the splendid vigour and vitality they will give you.

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2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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POLLINATION OF FRUIT TREES

Observations and Experiments From 1904 to 1912

By W. J. Middlebrooke, From the Journal of Agriculture August, 1915

The theory of pollen sterility, i.e., the inability of certain varieties of fruit to fertilize themselves and produce fruit, has not yet been completely established. The few experiments that have so far been carried out have not proved that any particular pollen can be said to be absolutely sterile, and they can only be regarded as a preliminary to further experiments and research. Before the theory of pollination can be made of any practical benefit to the fruit grower, many more experiments, requiring much time and patience, must be carried out in a methodical and continuous series.

The magnitude of such an undertaking must be apparent. The facilities for carrying out experiments of this nature do not exist in private gardens or even nurseries, where other work must always be the first consideration; the work can only be successfully accomplished in a properly equipped research station by a staff of experts. The problem is rendered more complex by the ever-increasing number of varieties of fruits. To make a comparison of all the varieties in cultivation, each with the rest, would be an appalling task, and any attempt to conduct experiments on such a scale would almost certainly be unsuccessful.

It is admitted that some varieties produce pollen more potent than any other varieties of the same kind; it is also admitted that the mixing of the varieties is beneficial in securing larger crops, and that being so, we have a very good foundation on which to build future research schemes and experiments. The first step is the collection of evidence to determine the most prolific varieties, i.e., those which are likely to give the best results when used for pollination purposes; the next, to test the potency of the pollen of these varieties on shy-bearing varieties. The latter are in a minority, but unfortunately, include some of the best flavored and highest quality varieties, such as the Ribston Pippin apple, which would become valuable to the market grower if an average crop could be secured.

It is the unsatisfactory cropping of many varieties of fruit that has led to the investigations into the relative potency of the pollens of different varieties. Sterility cannot be attributed to close in-breeding; most of the varieties of fruit trees in cultivation originated in chance seedlings, the parentage of which is unknown, and little effort has been made to produce strains or fixed types of fruit trees as in the case of flowers and vegetables. Neither can sterility always be attributed to impotent pollen; many other agents may be responsible for the destruction of fruit crops during the flowering period.

The interest of the writer in the problem was awakened in the spring of 1906, in consequence of some failures, and partial failures, in securing satisfactory crops of fruit on some special varieties, on trees grown in pots for exhibition purposes. The failures occurred only with a few varieties, some of which were most desirable for exhibition, on account of their handsome appearance and good quality. At that time the pollination was carried out by means of hand brushes, the pollen being collected without regard to the selection of any special varieties. This system of pollination being only partially successful, further observation and experiments were made. Pollen was selected from a number of varieties of a decidedly free-bearing and free-setting nature. While doing this it was noticed that some varieties produced a much greater quantity of pollen than others. These freely pollen-producing varieties were extensively used for pollinating purposes with a conspicuous success which gave an impetus to further experiments, on a larger scale with a larger number of varieties. The succeeding experiments were carried on in a more methodical manner, and the results were recorded for reference, with a view to the revision, if necessary, of the varieties to be used in fustage of the experiments. At this ture pollen experiments. At this stage of the experiments the system adopted for the collection of pollen was to use one brush for one variety, labelling the brush with the name of the variety from which the pollen was taken; the pollen was then applied to the varieties chosen for the application of this particular variety of pollen, the pollinated tree being labelled with the same name as the brush containing the pollen.

Pollination by Bees.—In 1910 a stock of bees was introduced into the orchard house where the trees were grown for half the season, that is through the flowering period, until the fruit was three-parts matured, when the trees were transferred to the open air to finish. The bees were introduced mainly for the purpose of pollinating curarnts and gooseberries, it being found impossible to do this effectually by artificial means. The bee experiment was also a failure as far as the currants and gooseberries were concerned; the bees ignored them, and preferred to feed on the honey remaining in the hive. The bees were allowed to remain in the orchard house until the other kinds of fruit trees flowered, a portion of the trees being left unprotected for them to work upon in order to ascertain what results bee pollination would show. The results of bee polliantion were not nearly so good as those obtained by artificial pollination, but this may have been due to the too many kinds of fruit being in bloom at nearly the same time. Apricots, peaches, and nectarines were the first to open flowers, and the bees worked among them well, until the cherries and plums came into flower, when they preferred the latter and letf off working the former; the same thing happened when the apples and pears came into bloom. From observations made during the experiment, it was clearly shown that the bees worked newly opened flowers for honey collection, and they did not appear to collect pollen at the same time; pollen was apparently collected separately, or by special bees. It was noticed that when alighting at the entrance to the hive, some of the bees were loaded with pollen, while others had none so far as could be seen.

Very few insects visited the flowers, and in all probability did little, if anything, towards distributing pollen. Exception must, however, be made with regard to bumble bees, a number of which were continually at work; a small dark-colored species of bumble bee appeared very early in the season, and worked incessantly during periods of sunshine, and often on dull days when the atmosphere was warm. These small bumble bees began work earlier in the day than the hive bees and continued working later at night; they did the work of pollination very effectively. Flowers which were marked as being visited by the bumble bees were found to be effectively fertilized, the flower petals falling two days after their visit. The bumble bees did not apepar to collect pollen and carry it away, but a small quantity of pollen adhered to their legs and the hirsute covering of the lower parts of their bodies, thus ensuring cross-pollination.

Pollination was most effective on days with intervals of clouds and sunshine (typical April weather) with a warm and slightly humid atmosphere. On dull, cold days and abnormally hot days pollination was ineffective. The rapid evaporation on hot sunny days caused the foliage to flag, and the flowers to become limp, with the result that the vitality of the trees was lowered for the time being, and the trees prevented from performing the necessary functions for effective fertilization.

Pollination by Wind.—Experiments on pollination by wind were also tried; the wind was simulated by the use of bellows, and by shaking the trees. This method of pollination prdouced good results; it was also noted that out-door fruit set more freely with gentle breezes of wind and ocacsional showers of rain, and a sufficiently warm atmosphere.

The trees for test purposes were isolated by means of muslin screens on a framework of light canes. Suitable trees of small size were selected for the purpose, and a uniform number of fruit buds were left on each tree. As the flowers opened the anthers were removed from those to be fertilized, thus ensuring a correct test. The pollen was applied as soon as the flowers were sufficiently developed and the female organ in a receptive condition.

Value of Results Obtained.—The results of these experiments were very successful from a practical point of view, as only about 5 per cent of the trees failed to set a sufficient quantity of fruit for a crop, and no trees were entirely barren.

The tabulated figures given in the original article plainly indicate that there is greater possibility of securing good average crops of fruit where a number of different varieties are grown in proximity to each other.

It has been the practice of commercial fruit-growers in recent times to plant large blocks of one variety which makes a good price in the market. In doing so they have overlooked the possibility of loss of crop from ineffective pollination. In the county of Kent it is the custom to plant two rows of male hops, for the double purpose of protection from wind, and to fertilize the female or fruiting hops. Growers also plant filberts among cob nuts to assist in the work of pollination, the filberts producing a greater profusion of male catkins than cub nuts and a better crop of nuts is ensured. Yet they have overlooked the necessity of doing the same thing with fruit trees. The policy of planting large blocks of one variety of fruit has no doubt necessitated the regrafting of large acreages of apples and pears, the grubbing up and replanting of many acres of plums, and the discarding of many excellent and valuable varieties of all kinds of fruit.

The figures given in connection with this article cannot be regarded altogether as final ,but only as a step in the right direction of obtaining satisfactory evidence of a anture which will be of practical value to the gorwer. To obtain full and satisfactory information on this subject it is desirable that future experiments should be conducted in the open air under natural conditions.

(Continued on Page 225)

Choose Your Breed and Stick to It

How a Charlotte County Farmer Built Up a Herd of Producers.

While on a recent visit to the pretty border town, St. Stephen, the Editor of the Maritime Farmer asked a prominent business man of that thriving town: "Who is one of the most progressive farmers in this vicinity?" "I believe Mr. Helon Todd, of Milltown, is one of our best and most progressive farmers," was the reply.

The name, Helon Todd, sounded rather familiar to us and very soon we recalled that while conversing one day with Mr. Fred E. Sharp, the Clydesdale breeder, of Midland, N.B., he had referred to a visit he had paid to the farm of a Mr. Todd, of Milltown, where he had seen a fine herd of Jersey cattle. Mr. Sharp had been so taken with the well developed, thrifty, milky appearance of the herd that he had come to think and talk as freely about the merits of a good Jersey as he does of a good Clydesdale. So enthusiastic was Mr. Sharp over the merits of the Todd Jersey herd that the infection spread to ourselves and we decided that when next time we had occasion to go to St. Stephen we would visit Mr .Todd's steading. On inquiry we learned that Mr. Todd's farm was only a few minutes' walk from the street car line near the Milltown Mills. In a few minutes we boarded a car in company with a St. Stephen friend who volunteered to act as our guide.

We soon arrived at the Todd homestead, where we found Mr. Todd in his well appointed dairy preparing to separate the golden cream from an array of well filled pails of milk that had just been taken in from the stables.

It was a pleasure to watch Mr. Todd at work in his dairy, where the operator and all his surroundings were as spick and span as could be. It was also a delight to see how conveniently aranged and well equipped the dairy was.

The dairy is located in an ell adjoining the kitchen. The equipment consists of a small upright steam boiler, about 2 feet in circumference and 4 feet high, a steam turbine driven cream separator, a small power churn, a jacketed cream ripening vat so built that by opening a small valve, steam from the boiler comes in contact with the outside of the cream container and heats its contents to the proper degree of temperature. There is also an ararngement whereby cream may be kept sweet and cool in warm weather. There is also a large sink with hot and cold water on tap and a tank where a large quantity of water may be heated in a very few minutes by opening a valve that allows live steam from the boiler to diffuse through it. Mr. Todd is a great believer in hot water, and lots of it, for keeping his dairy utensils in a perfectly sanitary condition. After being thoroughly scoured with water and brush the butter worker ladels, etc., are carefully covered with cheese cloth to further protect their cleanliness until they are again used.

There are no filthy, germ laden strainers in the Todd dairy. The strainer consists of several thicknesses of cheesecloth which is placed over the separator tank and held in place by two grooved pieces of maple wood. The cheese cloth is thoroughly washed and the two pieces of wood are scoured when the other utensils are being cleaned after each milking.

The cream is sold to the ice cream parlors of Milltown and St. Stephen and the skim milk goes to develop a thrifty bunch of calves. Surplus cream is made into butter which finds ready sale in the nearby town. The water used in the dairy and for the stock is piped in from an acquaduct whence it comes by gravity.

Mr. Todd's plan is to light a fire with good dry wood under his boiler before he goes to milk his cows and when the milking is completed the boiler steam is up to the required pressure. A valve is opened and around goes the separator bowl. The milk is strained into the separator tank, the speed indicator is examined and as soon as it indicates that the bowl is turning the specified number of revolutions per minute, the milk is allowed to flow and very soon the golden stream is trickling into the receptacle.

THE TODD HOMESTEAD, MILLTOWN, N.B.

HELON TODD'S JERSEYS AT PASTURE

After Mr. Todd had completed his work in the dairy he conducted us to his stables where we saw his splendid Jersey herd. The various individuals in the herd are particularly well developed, possessing abundance of vigor, and constitution enough for some of the larger breeds. The whole herd is uniform in type and it is a pleasure to see young calves so well developed that they look like yearlings, yearlings that look like two-year-olds and two-year-olds that look like mature cows. Each and every animal in the herd was dehorned in calfhood by the application of caustic potash to the embryo horns and this helps to give the herd its characteristic uniform appearance.

Mr. Todd says that after following the dehorning system for many years he would not think of keeping a horned animal in his herd. The process is so simple and takes so little time that it does not pay to put up with the bullying that goes on among cows that are not dehorned. There is always more or less trouble and loss from bruised and torn udders in herds where the cows are not dehorned. There is always a tyrant that wants to be boss of the herd and who is ever ready to push and poke whenever they get a chance.

The well developed condition of the herd is due to the master hand of the feeder, and lots of skimmilk while the calves are growing to cowhood.

The story of the origin of the herd is as follows: About fifty or fifty-five years ago Mr. Todd's father asked the captain of the steamer plying on the St. Croix River and between the Islands in the Bay to buy him a heifer calf on the Island of Campobello, where there were some particularly fine Jerseys that had been imported from the Channel Isles. Mr. Todd does not know who imported them or who bred them and consequently no trace of the registry of the calf can be found. Neither Mr. Todd nor his father ever purchased any other females so that each individual in the present herd is a descendant of the calf purchased over fifty years ago. Jersey bulls have always been used on the herd. During the last ten years Mr. Todd has been using bulls imported from Hood Farm, Lowell, Mass.

Mr. Todd has only thirty acres of arrable land and as he keeps about thirty head of stock, he is keeping an average of one Jersey per acre. He raises all the roughage, hay and roots required for feed and he purchases all the grain feeds including liberal quantities of cotton seed meal.

All the crops raised on the farm are fed on the farm. Cream, butter and surplus cows are the only products sold off the farm.

A rotation of crops is followed and each year one of the mowing fields is used for pasturing the stock. The herd were on rough pasture only eight days last summer.

Very fine sawdust from a box factory is used for bedding and enough is used to absorb all the liquid manure, which is in this way saved for wages are paid and town hours are observed.

He has to compete in the open labor market for the necessary hired help which is secured in the town. Town the use of the farm crops and heavy bills for commercial fertilizers are avoided. We know many farms where a great deal of money could be saved by following Mr. Todd's plan for conserving liquid manure.

The stalls are arranged so that the cows are lined with the gutter by means of a movable rack in each manger. The rack is moved back or pushed ahead to suit the length of the rspective animals. Consequently every animal is kept as clean as clean can be.

The young herd is increasing very rapidly and usually Mr. Todd has some very choice individuals for sale. Long years of selection has brought the herd to a high average as producers and although they are not registered they are as nice a herd as we have seen for many days.

What Mr. Todd has been able to accomplish in building up a high grade herd may be done by any farmer who will consistently stick to the breed of his choice for a number of years and who will not withhold his hand in the feeding of his young stock.

CORRECTION

Craig Bros., Amherst, N.S., have just called our attention to the fact that they won first prize in the pullet mating of the Barred Plymouth Rock class. Inadvertently this winning was credited in our issue of December 21st to Watson Lutz, Moncton.

Agricultural Short Courses on P. E. I.

The Department of Agriculture has arranged to hold a series of courses lasting for three to five days in a place, and reaching as many points as possible during the winter months. These are not to replace the regular two weeks' course in Live Stock and Seed Judging usually held in Charlottetown and discontinued this year due to the use made of the building by the soldiers, but to supplement it when normal is again regained. The theoretical in agriculture will be brought near to the practical. Lectures covering Live Stock, Poultry, Grains, Weed Seeds, Soil, Drainage and Co-operation will be given by the members of the Provincial and Dominion Departments of Agriculture. Demonstrations in stock judging will be held whenever possible. Lantern lectures will supplement the lecture work in live stock.

The first course will be held at Palmer Road comemncing January 10th, and on January 17th, a second one will be opened at O'Leary. Others will be held at Souris, Montague, Murray River, Hillsboro (in the Consolidated School) and at other points to be arranged.

Seed Fairs are held annually at some of the above mentioned points—the agricultural course and seed fair will be held during the same week at every point if suitable arrangements can be made. Efforts are being made to induce all the young men to attend.

Available Phosphoric Acid vs Available Phosphates

We wish to call the attention of the readers of the Maritimo Farmer to the advertisement of the Cross Fertilizer Co., of Sydney, N.S., which appears on the inside front cover of this issue.

The reason why the advertisement in question is published in the Martime Farmer is not only as a protection to a legitimate brand of goods, but also to warn the farmers of the Maritime Provinces that misrepresentations are rife. The writer of this article has been shown correspondence that backs up the statements made in the ad. He has also seen corerspondence from parties who have evidently purchased low grade slags just because they did not understand the difference between the terms "available phosphoric acid" and "available phosphates."

Anent the slag situation a prominent business man, who is in close touch with the problem says: "Under war conditions, Basic Slag, in the old country, has advanced in price about 30 per cent. This applies to basic slag of recognized quality, viz.: 10 per cent. or over of soluble phosphoric acid.

Freights, war-insurance, etc., are now trebled in price. It is therefore impossible for any company to import a slag of but only the very lowest grades. It is these lowest grades only that are being offered overseas this year, as the quality is so low that the farmers of the United Kingdom will not purchase if a better grade is available. So the over-seas markets are bare of only the low grades and this furnishes an opportunity for anyone to purchase these at a low price.

But with the freight and insurance added (about $8.00 per ton) it makes an expensive article. It is not reasonable therefore, that phosphoric acid can be bought as cheaply in this way as in a standard article of slag.

The principal plant food contained in Basic Slag is phosphoric acid.

The value of Basic Slag therefore depends upon:

1. The total percentage of phosphoric acid.

2. The percentage of phosphoric acid soluble in a 2 per cent. solution of citric acid. (Citric acid being much like the acids in soils as well as the acids secreted by plant roots.)

3. The fineness of grinding.

In 1909, Prof. M. Cumming of the N. S. A. C., Truro, in his report, warned the farmers of Nova Scotia as follows: "Farmers should familiarize themselves with the facts and should pay for the basic slag they buy prices varying with the amount of phosphoric acid contained. There has been altogether too much low grade slag sold at high grade prices. If a man buys a low grade slag he should pay a proportionately low price for it. In buying slaig one should always demand the analysis and be governed accordingly."

It is recognized by all agricultural authorities on agricultural matters that the amount of stable manures annually accumulating on the farms in the Maritime Provinces are not sufficient to enable the farmer to cultivate and keep in good condition all he is now able to work, since the introduction of modern farm machinery. He is therefore obliged to purchase artificial fertilizers to supplement his manure pile.

The need for artificial manures being recognized, the farmer will do justice to his farm and his pocket book if he pays particular attention to what is being supplied by the manufacturers of fertilizers. Since fertilizers are to supplement or take the place of stable manure they must contain the same elements of plant food.

These elements are: nitrogen, phosphoric acid and potash.

Potash hovering in the vicinity of $500 per ton and almost impossible to get even at that price will not be used very extensively by the farmers of the Maritime Provinces this year. They must look well to their ash barrels, cultivate their fields thoroughly and depend on the potash supply that exists in their soils.

Nitrogen, which is in normal times, the most expensive form of plant food the farmer has to buy, is also abnormally high this year and lucky is the farmer who has his fields well tilled and who gives the legumes a prominent place in the rotation.

Phosphoric acid, the other element will be the most in demand this year, and will be supplied in the form of bone meal, basic slag and acid phosphate. The last two are the main sources.

Nature deposited phosphates in rock deposits in Canada, South Carolina, Florida and Tennessee. The produce of these rocks when ground and treated with sulphuric acid is called acid phosphate or super-phosphate. Nature also deposited in the rocks at Belle Isle, Nfld., iron and in these rocks there is also a percentage of phosphates which must be eliminated from the iron ore in the manufacture of steel. Under the superheated condition of the iron furnace these phosphates combine with lime to form what is known as four lime phosphate. A four lime phosphate is not soluble in water but a considerable portion of it is soluble in dilute vegetable acid, such as exist in the soil.

In a ton of high grade slag there are from 250 lbs. to 300 lbs. available phosphoric acid. The farmer should therefore note particularly that it is impossible to buy pure phosphoric acid —it is usually purchased in some form of phosphate of lime.

We wish to warn our readers against any misrepresentation that some ignorant or designing agent may try to put over when he tries to sell slag under a guarantee of "available phosphates." These words resemble the words "available phosphoric acid" and are often so cleverly quoted that in some cases farmers, not intentionally, have bought basic slag on the guarantee of "available phosphates" although the law requires a guarantee of "available phosphoric acid."

Don't buy a slag represented to you as containing 16 to 20% available phosphates and pay as much for it as you would for a slag containing 10 to 14% Prosphoric Acid. If you do you are paying too much for it because it only contains from 8 to 10% phospheric acid.

You would not be willing to pay as much for 8 or 10 barrels of a certain grade of flour as you would for 10 to 14 barrels of the same grade. Neither should you be willing to pay as much for 8 to 10 units of phosphoric acid as you would for 10 to 14 units of the same commodity.

The Short Courses at Sussex and Truro

SHORT COURSE OPENS AT AGRICURTURAL COLLEGE

The short course at the college of Agriculture, Truro, commenced on January 3rd, with an attendance of over one hundred, which, despite war conditions, is fully up to the initial attendance at any of the previous short courses. There are several students from Yarmouth county, upwards of forty from Cape Breton counties, and a very considerable number from the remaining counties of the Province. The poorest representation this year is from the fruit growing counties, probably owing to the fact that returns from the orchards were not as satisfactory as could be hoped for. The initial classes of the judging of beef cattle was taught by the principal, who will continue instruction in this subject during the day. The evening lectures will be delivered on plant diseases and insect pests by Professor Smith and Brittain.

The classes are in full swing, and all the students are looking forward with interest to the opportunity of studying the wonderful cows which are now housed in the stables at the college farm. Among these is the great Holstein cow, Victoria Calamity Clay, that ahs in less than one year given to date over 22,000 pounds of milk exceeding by several thousand pounds, the record for Maritime Canada. Recently a milking machine has been installed at the college, and naturally the students in attendance at the course are greatly interested in watching this modern device.

Perhaps the subject which is being talked about more than any other is the use of lime stone on Nova Scotia soils, which is being dealt with. Araringements have been made with U. H. Kenedy, M.P.P., who has purchased a lime pulver, to have the same in operation on the college premises for several days, and lectures on the subject will be given by Professor Harlow, the chemist, and Professor Trueman.

In the women's short course which is being conducted concurrently in the new science building, the enrollment for the first session was twenty-five, but a large influx of students is expected during the ensuing days. The facilitiês provided in the new building have made it possible to offer a most attractive course in domestic science and the allied subjects. By next week, when the Womens' Institute Convention will be held, it is expected that the ample building will be tested to its utmost to accommodate the numbers who purpose attending.

THE SUSSEX SHORT COURSES

Among the subjects that will be discussed at the Sussex Agricultural School classes from January 11th to 21st will be:

Orchard Planting, Varieties of Apples and How to Judge Them, The Care and Renovation of Old Orchards, The Care of Young Orchards, Apple Packages and Packing, Weeds and Their Control, Apple Diseases, The Value of Leaves, —by R. P. Gorham.

Beekeeping, Land Drainage, Fertilizing Materials, Home Mixing of Fertilizers—by H. B. Durost.

Production of Clean, Wholesome Milk, Care and Ripening of Cream and Butter Making, Private Dairy Versus Co-operative Manufacture, Cream Separators and their Operation. Milk Testing with Demonstration of Babcock Test.—by C. W. McDougall.

Record Centre Work.—by H. N. Flewelling.

Poultry House Construction, Artificial and Natural Incubation, Breeding and Feeding for Winter Egg Production, Poultry Breeds and Summer Care of Chickens, Killing and Dressing of Poultry.—by Seth Jones.

Small Fruit Culture, The Home Vegetable Garden.—by O. W. Wetmore.

Dairy Bacteriology, Preparation of Sprays, Potato Disinfection and Treatment of Grain for Smuts, Club Root of Turnips.—by G. C. Cunningham.

Oats, Wheat, Seed Selection, Potato Judging and Seed Selection, Corn and Soiling Crops, Grasses, Clovers, Seed Selection, Turnips and Root Crops, Judging and Selection of Roots,—by S. J. Moore.

Judging Beef Cattle, Judging Horses, —by W. W. Hubbard.

Judging Horses, Crop Rotations, Judging Sheep,—by W. W. Baird.

Cultural Methods, Dairy Cattle, Judging Dairy Cattle, Judging Swine, —by Prof. J. M. Trueman.

Entomology—by Wm. McIntosh.

If you can spare the time to attend the entire course it will be the best investment of time and money you ever made. No fees.

The Teachers' Winter Short Course in Nature Study and Elementary Agriculture which was held in Sussex last week was very successful.

One hundred and seven students were enrolled. Although only 100 were asked for, applications were received from some 350 who desired to attend.

Mr. R. P. Steeves, who had charge of the work, had a well arranged program prepared. Competent instructors were present and the teacher-pupils were kept busy every minute. They have all returned to their schools carrying with them the germ of enthusiasm in agricultural matters and undoubtedly they will all be better prepared to cope with the problem of nature study than they have ever been before.

Agricultural Confrence.

The heads of the agricultural departments of Nova Scotia, New Brunswick and Prince Edward Island are meeting at the N. S. A. C. on Wednesday, July 12th to confer on matters of joint interest. Dr. C. C. James will be present and one of the subjects that will come up for discussion will be "Agricultural Education."

Hon. J. A. Murray, Minister of Agriculture, for New Brunswick, will be one of the speakers at the opening of the new Science Building, Truro, on January 11th.

OMISSION

In our official list of prize winners at the Maritime Winter Fair, which was published in our issue of December 21st, Mr. Burdwin Goodwin's winnings in the ewe lamb section of the Oxford Down Sheep Class was inadvertently omitted. Mr. Goodwin won first, second, third and fourth prizes on ewe lambs.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. When paid in advance 80 cts. Persons taking advantage of the 80 cent rate are only entitled to it by paying in advance each year. When subscription gets in arrears, $1.00 per year will be charged. Subscribers are requested to bear this in mind. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written complaint must be made to the publisher within one week from the date of any unsatisfactory transaction, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said:—"I saw" your adv. in the MARITIME FARMER.

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JANUARY 11, 1916.

DATES OF ISSUE.

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FARMERS AND THE BANKS.

The estimation in which the business of farmers generally is held by the banks may be judged from the following extract taken from "The Manual of Canadian Banking," by H. P. Eckardt, a standard work on the subject:

"The kind of business the manager will be called on to transact will depend on the kind of district in which his branch is located. The majority of the country branches are located in the prosperous agricultural districts. In them there are considerable dealings with farmers. There is much variety in the business of the various agricutlural branches. A branch in an Ontario town, for example, will contrast sharply with a branch in a Manitoba or Alberta town. In the East, the bulk of the farmers' business consists of deposits; in the West it consists of loans. Wherever it is the farmers' business is highly prized. Taking the farmers as a whole, it can be said that they do not use the bank's capital—they furnish deposits to equal or more than equal their borrowings. The dealings of the bank with them, therefore, consist in its turning over their money at a profit. Moreover, loans to farmers, when properly made, comprise one of the safest of the banks' investments, and cause probably less anxiety and trouble than any other class of loan.

'Of the other classes of dealings there are many where the opposite of this is the case. It cannot be said that manufacturers do not use the bank's capital; they do, and most extensively. The amount of loans to manufacturers far overbalances the deposits received from them. And quite frequently the loans are difficult to handle and occasion much trouble and anxiety.

"Those who have been most successful in dealing with farmers exercise care not to let their loans exceed the surplus liquid assets of the borrowers. They avoid making advances that will be regarded by the borrowers as something that can run on indefinitely—like a mortgage. They require a clearing up of liabilities every year.

"The notes offered by farmers are usually endorsed, one good farmer backing another, or else notes secured by produce shortly to be sold. In the East the loans are not usually large enough to be especially referred to head office, but in the West they are on a larger scale. Loans of the big farmers there not infrequently amount to one or two thousand dollars or more before their liabilities are cleared off through sale of produce or livestock.

"Then there are the accounts of the produce and livestock buyers. They require advances of the bank's money to enable them to pay cash for what they buy. The advances are usually for short dates, and are secured by endorsed notes, or by pledges of the commodities bought. These men, especially the livestock buyers, are expert traders, and pretty keen on getting horses, cattle, etc., from the farmers as cheaply as possible. As a rule they are careful of their reputation at the bank and do not try to get ahead of it. For all that, the loans have to be carefully watched."

START MEETINGS ON TIME.

Now that the season for annual conventions of agricultural societies is at hand, it behooves officers and members to make use of every minute. Some societies have acquired a reputation for starting the meetings on time. Likewise, the leaders make the sessions throb with interest every moment of the meeting. On the other hand, some associations are decidedly slow in the conduct of their meetings. Generally the sessions are all too short as it is, and every moment counts. If the members know the meetings will begin at the scheduled time, they are not going to lose out by being late. The prompt start of each session does much to give the meetings spice and snap throughout. It is courteously suggested that officers and members alike do their utmost to bring this about. The same truths apply equally well to the multitude of small farmers' meetings that are held during the winter months.

ARE YOU ONE OF THESE GIRLS ?

There are many girls who try to shun all household duties, and, beyond making themselves neat and attractive, are utterly useless. Every girl ought to be eager to lift some of the burden of household management from her mother's shoulders on to her own; but unfortunately some of them are so averse from labor that they wait to be asked to do things instead of being constantly on the look-out for little duties which they are capable of doing. If girls would be of any real use in the home they must be quick to notice what is wanted—the room that needs dusting, the flowers which require rearranging, the curtain which has lost a ring, and is therefore drooping. And then they must not only be willing to do it pleasantly, without making people feel that they are suffering martyrdom.

THE BUSY MAN'S CREED.

Elbert Hubbard says:

"I believe in the stuff I am handing out, in the firm I am working for, and in my own ability to get results. I believe that honest stuff can be passed out to honest men by honest methods. I believe in working, not weeping, in boosting, not knocking, and in the pleasure of my job. I believe that a man gets what he goes after, that one deed done today is worth two deeds tomorrow, and that no man is down and out until he has lost faith in himself. I believe in today and the work I am doing, in tomorrow and the work I hope to do, and in the sure reward which the future holds. I believe in courtesy, in kindness, in generosity, in good cheer, in friendship and honest doing something for every man ready to do it. I believe I'm ready—RIGHT NOW.

MR. MICAWBER ON THRIFT.

There is a valuable lesson for farmers, as well as other people, in the dictum on the subject of thrift which Dickens puts into the mouth of that most famous of all unthrifty characters, Wilkins Micawber. Micauber, in the midst of one of those trying seasons of "financial difficulties" which so often marked his career, declared to his young friend Copperfield that he had nothing to give but advice. His first warning was against procrastination. The narrative proceeds:

"My other piece of advice, Coperfield," said Mr. Micawber, "you know. Annual income, twenty pounds, annual expenditure, nineteen pounds nineteen and six; result, happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six; result, misery. The bloom is blighted, the leaf is withered, the God of day goes down upon the dreary scene, and—and, in short, you are forever floored. As I am."

Scrub dairy bulls are good runners—they run the herd down.

The man who thinks that a dairy cow can rough it and still be a profitable milker has some things to learn about cows. No animal shows the bad results of neglect quicker than a good cow. And none responds more fully to good care, good feeding and kind treatment.

Is there any person in your immediate vicinity who knows just what to do at once in a case of a very bad wound to a neighbor, a broken bone or a case of poisoning? In every school district there should be two or three persons who are well qualified to give "first aid." If you are a bright young man or woman, no one could be better qualified than yourself to take up the study.

Health is one of the geratest factors of success. The ability to do a good, full hard day's work is a prime requisite of business with clerk or proprietor. To "peter out" early in the afternoon means, to a young man the certain knowledge that something is radically wrong with him. Late hours, cigarettes, too little exercise in the open air—or a combination of several "little things" are having their effect on him. He should buck up and cut them out if he would be mentally and physically fit to do good work.

"Every clerk should be the understudy of the man above him. Could you step into Brown's shoes if he were suddenly called away for a week? Could you carry on his work to the satisfaction of the boss if typhoid kept him away for two or three months? The clerk who flounders and is perplexed when unexpectedly confronted with a situation he ought to be prepared for, is not the man who is headed for the boss's chair." The above is just as applicable to the farm boy as it is to the clerk.

Pollination of Fruit Trees.

(Continued from Page 221)

From the tabulated figures given, a casual observer, unacquaitned with this kind of experimental work, may think that the average results obtained show a very low percentage, but as a matter of fact the percentage was higher than was anticipated or could be expected, seeing that every flower in each truss of bloom was taken into account. No thinning was carried out, as this would have led to exaggerated results. The average number of flowers in a truss of the different kinds of fruit as roughly as follows: Apricots, 3 to 5; apples, 5 to 7; cherries, 15 to 26; nectarines and peaches, 2 to 5; pears, 9 to 12; plums, 3 to 9. Apricots, nectarines, and peaches produce a quantity of flowers singly, disposed alternately on the shoots or at intervals between triple buds, the centre being a growth bud. On extra vigorous shoots three to five flower buds are formed in a cluster round a growth bud. It will be seen from the number of flowers contained in a truss or bunch that it is impossible or unlikely that every flower will set and develop fruit; it was invariably found that the first flowers of a truss that opened were fertilized and began to swell immediately, while the remaining flowers of the truss although they may have been duly pollinated, did not swell; the stalk and embryo fruit turned yellow and fell off.

The number of fruits developed on each truss varies with the variety. In apples the small and medium-sized fruited varieties matured the greatest number per truss, sometimes producing as many as six fruits in one cluster; the large fruited varieties rarely retained more than one or two fruits in a bunch, although sometimes three were matured. Pears, except some of the larger fruiting varieties, which rarely matured more than three in a cluster, carried more fruit per bunch than apples. Cherries and plums are more variable than apples and pears, in favorable seasons the amount of fruit set and retained was enormous, and required considerable thinning, otherwise the fruit was small and the trees were impoverished.

Experiments with Cider Apples.—Experiments with the pollen of cider apples were made, but not on a large scale; the results were satisfactory in the majority of tests. Observations made in connection with orchards of cider fruit and mixed orchards, in the county of Hereford, showed that cider varieties cropped more heavily and with greater regularity than culinary and dessert apples, and that, where culinery and dessert apples were intermixed with cider apples, better crops were obtained. One instance may be mentioned. In an orchard at Cubberly, near Ross, the following apples were growing among cider apples, viz., Blenheim Orange, Bess Pool, Ribstone Pippin, Catshead, and several other varieties, all of which were heavily laden with fruit, the fruit hanging on the branches like ropes of onions, bending the branches until the tips of them touched the ground. Similar results were noted in orchards all over the country where other varieties had been planted among cider varieties.

From observations and experiments made, it is sugegsted that, at any rate in grass orchards with standard trees, cider varieties planted among culinary and dessert apples would have a beneficial effect on the cropping of the latter. Cider varieties worked on Paradise stocks could be tried in plantations of bush trees. The varieties of cider apples experimented with were early flowering varieties; the bulk of cider apples flower late, consequently they would not be serviceable for the pollination of the majority of culinary and dessert apples.

The following varieties of early flowering apples were tried and are recommende; the flowering period is indicated in brackets; Bedan des Parts (April), Cherry Hereford (middle May) De Boutteville (early May), Eggleton Styre (middle May), Handsome Hereford (middle May), Medaille d'Or ,early June), Rouge Bruyere (early May), Sam's Crab (April) (a good dessert eaten from the tree), Skyrme's Kernel (end of May), Strawberry Hereford (middle May), White Hereford (early May). All the above-mentioned varieties are extremely prolific.

Form of Fruit Tree Suitable for Pollination Experiments.—The best form of tree for pollination experiments is the single cordon, which should be grafted, or better budded, on suitable stocks. Single cordon trees occupy less room than pyramids or bush trees; they are mostly protected and isolated, and much easier to manipulate, either as pot plants or grown in the open ground. The apple should be worked on the broad-leaved English Paradise, pear or quince, and some varieties double grafted; plums on common plum and broad-leafed Mussel; and apricots on Brussel, Brompton, and Broad-leaved Mussel. Some varieties of stone fruit do better on one stock than another; it is therefore important that each variety should be worked on the stock best suited for it.

ults were obtained by placing the bushes in a position where they were more exposed to wind from the ventilators, and where a cooler temperature could be obtained. No difficulty was experienced with them when grown out of doors, except that they required protection from the frost.

(In the article in the British Journal of the Board of Agriculture a number of tables are given, showing results obtained with different fruits by cross-pollination as compared with the pollination by the varieties' own pollen and mixed pollen taken from various varieties indiscriminately.)

Nomenclature of Seed Grain.

Editor the Maritime Farmer:

Herewith I attach nomenclature of grades of grain for seed purposes which become effective December 1, 1915, at the government interior terminal elevators at Saskatoon, Moose Jaw and Calgary. The grain so graded will thereafter be available in the usual channels of commerce for grain.

It is not to be suposed that these grades of seed grain are comparable with selected seed grain that is pure as to variety, grown by expert seed growers, subjected to special screening and offered for sale at high prices. In rowed barley that is clean, of superior puality and reasonably pure as to variety or type of grain, so that such supply of grain may conveniently be made available to farmers, seed merchants or grain dealers who sell seed at the minimum cost; the main object is the improvement of field crops:

Therefore the Governor General in Council, under and in virtue of the provisions of Section 2 of the Seed Control Act, is pleased to order and it is hereby ordered as follows:

The nomenclature of grades of grain for seed purposes shall be as follows—the same having been revised and approved by the chief inspector of grain, viz.:

No. 1 Canada Western seed oats shall be composed of 95% of white oats, sound, clean and free from other grain; shall be free from noxious weed seeds within the meaning of the Seed Control Act, and shall weigh not less than 36 pounds to the bushel.

No. 3 Extra Canadian Western Seed barley shall be composed of the six-rowed variety, sound, plump, free from other grain, of fair color, free from noxious weed seeds within the meaning of the Seed Control Act, and shall weigh not less than 48 pounds to the bushel.

SUMMARY OF THE HIGHEST SCORES IN THE MARITIME WINTER FAIR DAIRY TESTS SINCE ITS INCEPTION

		°1915	°1914	°1913	°1912	*1911	*1910	*1909	*1908	*1907	*1906	*1905	*1904	*1903	*1902	Remarks Fairs 1902 to 1907
Ayrshire	Aged	221.3	205.56	198.4	240.12	139.58	128.27	112.79	113.4	108.96						Cow
	3-yr.	191.1	188.8	211.8	206.18	139.92	100.87	106.53	87.3		96.49	84.5		106.97	82.8	Highest Sc'e
	2-yr.	133.9	141.67	166.7	166.61	114.08	115.48	86.38	65.0	97.33						Heifer
	1-yr.	153.4	117.43	72.85	133.42	77.22										
Guernsey	Aged	187.3	214.15	175.57	228.38	127.01	147.61	93.45	103.9							
	3-yr.	224.3	156.78	146.21	200.88	144.81	96.43	111.8	86.4					82.37		Highest Sc'e
	2-yr.	146.2	184.53	112.71	108.76	107.28	85.35	80.74	71.8							
	1-yr.	106.3	112.9		88.68	85.73										
Holstein	Aged	300.0	332.57	259.7	227.23	137.18	141.93	171.47	132.3	114.44						Cow
	3-yr.	249.2	227.58	196.56	180.28	157.54	108.59	132.3	117.9		128.21	102.1	120.9	100.45	107.2	Highest Sc'e
	2-yr.	178.4	230.29	177.42	172.17	105.74	121.11	101.92	93.9	115.97						Heifer
	1-yr.	151.7	175.03	177.78	135.35	101.48										
Jersey	Aged	189.4	174.42	201.83	158.68	98.31	111.08	113.3	120.4	65.2						Cow
	3-yr.	198.3	156.88	189.86	194.20	99.71	140.15	82.33	87.4		113.21	102.2	112.5	99.36	73.8	Highest Sc'e
	2-yr.	119.7	151.05	149.01	188.59	90.79	94.70	94.14	81.2	65.13						Heifer
	1-yr.	105.3	99.86	136.40	81.73											
Shorthorn	Aged	141.7	106.4	149.32	133.31	105.85	77.61	65.73	74.6	84.01						Cow
	3-yr.	126.3	71.91	95.28	142.16	76.66	67.30		102.7		80.4	81.9		67.85	100.7	Highest Sc'e
	2-yr.	107.2	111.9	102.96	102.46	57.65	70.07		74.4							Heifer
	1-yr.	62.1	66.14			46.07										
Grades	Aged	223.6	228.2	243.68	238.53	156.95	149.0	143.16	132.9	83.92						Cow
	3-yr.	177.7	172.72	139.5	188.07	130.69	97.15	102.48	112.0		109.22	117.9	96.2	123.89	84.9	Highest Sc'e
	2-yr.	189.4	180.35	170.77	158.46	119.35	106.09	94.19	76.0	114.08						Heifer
	1-yr.	160.9	121.56	122.37	107.08	86.45										

The above table has been compiled from The Maritime Farmer's official report of the Dairy Tests at the Maritime Winter Fair. We believe it will interest the respective exhibitors as well as all our readers who are interested in dairying, as it affords an opportunity to compare the records of the respective breeds in the respective years. °72 Hours. *48 Hours.

Experiments with grapes proved that, with the exception of Muscat Hamburgh, which showed a preference for the pollen of Black Alicante or Black Hamburgh, there was a tendency for the pollen of all varieties to set freely. The cause of bad setting in such varieties as Alnwick Seedling, Duke of Buccleugh, Mrs. Pince, Black Muscat, and White Muscat, was found to be the presence of a little drop of nectar hanging on the end of the pistil, which prevented the pollen from doing its work. The obstacle being removed there was no difficulty in securing a thickly set bunch of berries. The method adopted for the removal of the nectar ocstacle was to syringe the bunches early in the day with clean warm water at a temperature of 50° F. above that of the house in which the grapes were growing; the water was driven through the bunches with some considerable force, and was projected in as fine a spray as possible; later in the day, when the bunches were dry, the hand was gently drawn down the bunches, which were afterwards shaken. Pot vines treated in this way were exhibited with as many as fifteen good-size bunches, well packed with berries.

In the case of the currant and gooseberry tests under glass, the best resthese grades for seed grain it is rather the object to provide a commercial grain that is practically free from noxious impurities and may safely be used for seeding.

Car lots of grain that may require a dockage, in process of cleaning to make god seed, of more than two per cent in excess of the dockage fixed by the grain inspector for the regular grade of wheat, or of more than three per cent for oats and barley, may not be accepted for seed.

GEO. H. CLARK,
Seed Commissioner.

PRIVY COUNCIL, (P.C. 2261) Canada.
At the Government House at Ottawa,
Thursday, the 30th September, 1915.
PRESENT:

His Royal Highness the Governor General in Council:

Whereas it is deemed desirable in the execution of the powers conferred by Section 2, of the Seed Control Act that special grades of grain should be established exclusively for seed purposes without affecting, of course, the commercial grades fixed under the authority of the Canada Grain Act:

And whereas, the primary purpose of providing a special grade of grain that may be suitable for seed is to create a substantial supply of Red Fife and Marquis wheat, white oats and six-

No. 1 Manitoba Northern seed wheat shall be composed of 85% of Red Fife or 85% of Marquis wheat, sound, clean and free from other grain, and free from noxious seeds within the meaning of the Seed Control Act, weighing not less than 60 pounds to the bushel.

For seed purposes, Red Fife and Marquis wheat shall be kept separate.

No grain shall be accepted for seed which will require a large dockage to clean.

Seed inspectors shall observe the foregoing regulations in the grading of grain for seed purposes, nevertheless inasmuch as the operations of seed inspectors are dependent upon and follow after the operations of grain in-

spectors in respect of the grain to be examined as to suitability for seed purposes, the seed inspector of grain or his deputy in all matters of procedure and prompt attendance to duties and for efficiency and accuracy of technical work done seed-inspectors shall be responsible to the Minister of Agriculture.

Seed inspectors are authorized to certify ex-elevator the grain graded for seed purposes pursuant to the foregoing regulations.

(Sgd.) Rodolphe Boudreau,
Clerk of the Privy Council.

A Comparison of Tillage and Sod Mulch in an Apple Orchard.

A continuation of the studies at the New York Agricultural Experiment Station to determine whether the apple thrives better under tillage or in sod. The experiment summarized in this paper was begun in 1903 in an orchard of Baldwin trees. The tilled land was plowed each spring and cultivated from four to seven times. The grass in the sod plot was usually cut once, sometimes twice, all other operations being identical for all the plots.

The experiment was divided into two 5-year periods. During the first period the orchard was divided in halves by a north and south line, and during the second period by an east and west line. Thus, one-qaurter of the orchard was under tillage ten years; another under tillage 5 years, then left in sod five years, the third quarter was in sod ten years and the fourth in sod five years, then tilled five years.

The writer summarizes the results as follows:—

The average yield of the plot left in sod for ten years was 69.16 barrels per acre, that of the plot tilled ten years 116.8 barrels per acre, making a difference in favor of tillage of 47.64 barrels per acre per annum. The fruit from the sod plots was more highly colored than that from the tilled land and matured from one to three weeks earlier than the tilled fruit. The latter keeps from two to four weeks longer than the former and is also better in quality, being crisper, juicier and of better flavor. The uniformity of the trees under tillage was in striking contrast to that of the trees in sod, which lacked uniformity in every organ and function of which note could be taken. The grass had also a decided effect on the wood of the trees, as evidenced by the greater number of dead branches and the less plump and duller appearance of the sodded trees. The leaves of the tilled trees came out three or four days earlier and remained on the trees several days longer than on the sodded trees. Those on the tilled trees were a darker, richer green and more numerous, indicating greater vigor.

The effects of the change from sod to tillage were almost instaneous. Both tree and foliage were favorably affected before midsummer of the first year, and the crop, while below normal, consisted of apples as large in size as any in the orchard, the falling-off in yield being due to poor setting. The change from tillage to sod was quite as remarkable and as immediate, the average yield of the new sod plots being less than half of that of the tilled plots. The use of nitrate of soda in the sod plots greatly increased the vigor of the trees and was a paying invesment, yet for the five-year period the yield was only slightly more than half as much as that of the tilled trees.

The very marked beneficial effect on sodded trees of placing adjacent ground under tillage shows that the sod should not only be removed round the trees but also for a considerable distance from them.

The changes in the soil due to the two systems concern chiefly the amount of humus and nitrogen. It was found that tillage and cover crops conserve humus and nitrogen better than the sod-mulch treatment.

The pasturing of pigs, sheep or cattle on sodded orchards does not overcome the bad effects of the grass.

The average cost per acre of growing and harvesting apples in sod was $57.73 and under tillage $83.48, making a difference of $31.75. Subtracting these figures from the gross return, leaves a balance of $74.31 for the sodded plants and $140.67 for the tilled plots, or an increase of $66.36 in favor of tillage.

Plant Diseases.

"Phoma destructiva," the Cause of a Fruit Rot of the Tomato in the United States and Cuba."

In March, 1912, the Bureau of Plant Industry received from Cutler, Florida, specimens of tomatoes affected with a fruit rot, which was stated to have caused great loss among the farmers of Dade county, Flordia. Some of the fruits were green, some beginning to color and others ripe. Most of the green and ripe fruits were marked on the sides and at the stem end with slightly sunken spots, the surface of which was on the sides and at the stem end with slightly sunken spots, the surface of which was membraneous or crust-like, 1 to 3 cm. in diameter, brownish black in color, with definite outlines. Tiny dark pustules were observed on the surface of the largest spots. On the ripe fruit the diseased tissue was surrounded by a more or less watery zone.

Microscopic examination showed that the diseased tissues of both green and ripe fruits contained a dense network of mycelium, with numerous pycnidia apparently belonging to Phoma as well as bacteria and sometimes spores of Macrosporium. However, the abundance of pycnidia in all spots examined suggested that the Phoma is the primary cause of the rot and this fungus was therefore isolated from the diseased tissues. Almost two years later an identical Phoma was isolated from tomatoes from Cuba and Florida, showing a similar appearance.

With the cultures of this fungus, now more precisely determined as Phoma destructiva, Plowr., the writer carried out a long series of inoculation experiments on green and ripe fruits and leaves of tomatoes (Lycopersicum esculentum) under glass, on green and ripe fruits in the laboratory and on plants growing in the open air. The leaves of young and old plants were also inoculated with the cultures obtained from the fruits. Experiments were also conducted on the infective power of the fungus on egg-plants (Solanum melongena), the tubers and haulms of potato (S. tuberosum), sugar-beets (Beta vulgaris), Datura tatula, peas (Pisum sativum), beans (Phaseolus vulgaris) and pepper (Capsicum annuum.)

These experiments showed that Phoma destructiva behaves as an active wound parasite on green and ripe tomatoes, and that it causes the formation of spots on the leaves of tomatoes and potatoes. The Phoma was also isolated from the inoculated tomatoes under glass in the laboratory and in the open field. The behavior of the fungus towards its host and its cultural characteristic are minutely described.

Programme of the N. S. Fruit Growers Ass'n.

The Fifty-Second Annual Meeting of the Nova Scotia Fruit Growers Association will be held in the Opera House, Wolfville, on January 18th 19th and 20th, 1916.

The usual addresses and discussions on questions of practical value to all maritime fruit growers will take up the major part of the programme. All members will kindly prepare themselves to take an active part in the debate at the Wednesday evening session, January 19th.

The agenda at the different meetings, subject to necessary changes, will be as follows:

TUESDAY EVENING

7:30 O'Clock

Opening Prayer—
President's Address— A. E. MacMahon, Aylesford, N.S.
Address— "Sucking Insects of the Apple."
Prof. W. H. Brittain, Truro, N. S.

WEDNESDAY MORNING

9:30 O'Clock

Secretary and Treasurer's Report.
Report of Advertising Committee.
Election of Officers.
Reports of Other Committees.
Resolutions and Other Business.

WEDNESDAY AFTERNOON

2 O'Clock

Address— "The Work of a Dominion Fruit Inspector."
Geo. H. Vroom, Middleton, N. S.
Address—"What is being Accomplished by the Dominion Entomological Laboratory at Annapolis."
Geo. E. Sanders, Annapolis Royal, N. S.

WEDNESDAY EVENING

7:30 O'Clock

Debate—Resolved,that the general adoption of mixed farming by which is meant the keeping of live stock and the raising of feed for the same, in addition to fruit growing, is in the best economic interests of the farmers of the fruit growing counties of Nova Scotia.

For the Affirmative (F. W. Foster, Kingston, N. S.
(R. J. Messenger, Lawrencetown, N. S.
(John Donaldson, Port Williams, N. S.
(W. W. Pineo, Waterville, N.S.

For the Affirmative (W. H. Woodworth, Berwick, N.S.
(A. E. MacMahon, Aylesford, N. S.
(S. B. Chute, Berwick, N. S.
(A. E. Adams, Berwick, N.S.

To make the debate a success it will be necessary for all members having a decided opinion on the resolution to join in the general discussion.

Prominent men in the educational institutions of Wolfville will be asked to act as judges.

THURSDAY MORNING

9:30 O'Clock

Address— "Some Lessons Learned from New England Fruit Growers."
W. H. Woodworth, Berwick, N.S.
Address— "Commercial Strawberry Growing and Marketing."
William B. Fawcett, Sackville, N.S.

THURSDAY AFTERNOON

2 O'Clock

Address—"Why We Should Prune and the Different Treatment for Old and Young Orchards."
M. B. Davis, Ottawa, Ont.

Address—"Scab Control in the Dominion Experiment Orchards in Nova Scotia."
Prof. W. Saxby Blair, Kentville, N. S.

MANNING K. ELLS, Secretary,
Port William, N. S.

To Keep Rabbits From Injuring Trees.

(A Letter from C. S. Harrison, York, Nebraska.)

The rabbit is nature's hypocrite. He seems innocent and harmless, but he destroys millions of dollars worth of trees in young orchards and nurseries.

I once left a small nursery in the fall, and on my return it was gone. Every rabbit for miles heard of the tender young trees, and they were completely devoured.

A great many plans have been devised to save young trees. Some tie corn stalks around them—a slow process. Others use tar paper, and some use the wood shields. Then often a rabbit is killed, and the raw flesh is rubbed up and down. And there is the lime and sulphur wash—a sloppy mess in winter.

Then I devised a process of my own. I got some of the cheapest soap I could find, put on a pair of old gloves, and went at it, rubbing the cake of soap up and down the tree.

It was a quick process; it doesn't cost much, and is efficient. The rabbit is a neat animal, but he doesn't like soap; he cannot endure it. He would rather go without eating.

Soap is a good thing for the tree. Dr. Chas. Bessey, our most noted botanist, commended the plan highly when I showed it to him. He said soap would benefit the tree anyway, destroying the insects which might be hiding in the bark, and so keep the tree bodies clean. There is no such muss in using it as in using washes.

The only trouble is that if it is a stormy and sloppy winter the first application might wash off, but ordinarily one treatment will last all winter. If it does not last, then go over the trees again.

Here is a Good Sign.

On one page of a recent issue of a farm paper, there apepared eleven live stock advertisements in which the signature "& Son." When the farm takes the young man into partnership there is no danger of the futuer for that farm and farmer. More farmers should substantially interest their grown up and growing up sons in the business. Give them a winter course at the N. S. A. C., interest them in pure bred stock, let them have a share in the proceeds and management of the farm; and few of them will heed the call of the city.

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The Jacobs Credit System enables you to make beautiful Christmas presents without the outlay of much money. A Diamond constantly increases in value and lasts forever.

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The vitality of the Phoma fungus is considerable, stem cultures living for nearly a year. The perithecial stage of the fungus has not yet been observed in culture or on host tissue, but only the pycnidia. The minimum temperature for the development of this Phoma is about 6° C., the optimum about 28° C., and the maximum betewen 32° and 33° C.

Besides the above localities, the parasite has been recorded from Florence (South Carolina), at Miamisville (New York) and at Herrington (Kansas) and it is probably still more widely distributed.

Formalin as a Spray Against American Gooseberry Mildew.

B. Panten, of Kazmierz, Posen, reports the results of spraying with a 1 per cent. solution of 40 per cent. formalin against American gooseberry mildew (Sphoerotheca mors-uvae). The bushes were sprayed in the early spring before the apearance of the leaves and again before flowering, taking care to wet all the wood and both lef-surfaces.

By this method the lichens and mosses growing on the older bushes were effectively destroyed. During 1913 and 1914 the bushes sprayed were quite free from attack, whilst those in the neighboring plantations were very severely attacked. Bordeaux mixture had been tried for three years without success, as all the bushes had become attacked by the disease.

Sources of the Early Infections of Apple Bitter-Rot ("Glomerella cingulata").

The researches of different investigators on apple bitter-rot in America have shown that Glomerella cingulata, the fungus causing it, can pass the winter in mummied apples of the preceding year and also in the cankers produced by the fungus, from which infection begins in the succeeding year. Other plants than the aple may serve as sources of infection.

According to observations made by the writer in the Ozarks (Arkansas), the fungus can winter on almost any cankered or dead parts of the diseased trees, including the cankers due to the Illinois apple-tree canker fungus (Nummularia discreta), in the dead tips of fruit spurs, the dead parts of limbs due to injury by freezing or death of the roots on one side of the tree, branches injured by mecahnical means, cankers caused by the peal-blight organisms (Bacillus amylovurus) and by the apple-blotch fungus (Phyllosticta solaria.)

The cutting-out of cankers greatly reduced the number of early infections of the disease, though removal of all dead parts is obviously practically impossible.

The Treatment of Peach Leaf-Curl ("Exoascus deformans")

The writer reports experiments carried on for several years in Northern Italy on protecting peaches from the attacks of leaf-curl. Fifteen ungrafted trees in the open were used, as well as 7 ungrafted cordons on trellis and 8 more against a southwest wall protected above by an 18-inch glass roof.

Of the 15 trees in the open, 6 were covered in February wtih a muslin net stretched to the tops of four poles and supported by two cross canes; the remaining 9 were left uncovered and sprayed twice with Bordeaux mixture, at the end of November and again in the middle of February.

None of the cordons were sprayed with Bordeaux mixture, but those on the trellis were covered wtih a similar net, except for two in the middle of the row.

The result was that none of the covered-in trees, whether sprayed or not, showed any trace of leaf-curl; the others were all badly attacked even when treated with the fungicide. The difference was particularly striking in the case of the trellis trees, where the two uncovered trees alone were diseased, those almost touching them on either side being perfectly free. The wall-cordons protected by the glass roof were also free from infection.

The writer recomemnds his method to small growers as inexpensive and an important factor in ensuring a healthy growth and continued fruitfulness. Effective covering with a muslin net so as not ot intercept air and light assures an almost constant setting of the flowers.

SPRYAING ADVICE

Demonstrations at Sussex and Woodstock to Students taking the 10 Days' Course in Farming, beginning Jan. 3rd, 1916.

Mr. A. G. Turney, Provincial Horticulturist, has arranged to give instruction and demonstrations on Spraying fruit trees and vegetables, at the 10 days' Short Term for Farmers at Sussex and Woodstock.

The Expert in charge of this department of the instruction is Mr. S. B. Hatheway, Manager of the Fruit & Land Company, Fredericton, and the make of Sprayer selected for the demonstration, naturally is the

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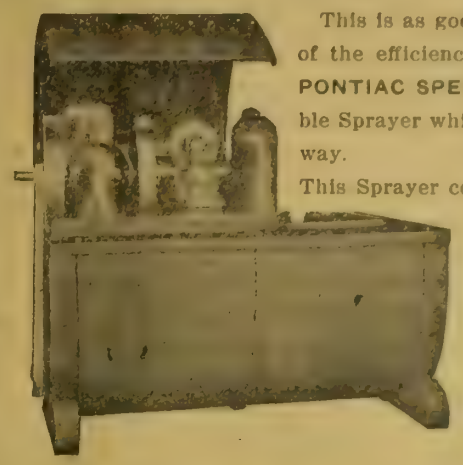

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DAIRYING.

A Noteable Canadian Holstein.

Rauwerd Count de Kol Lady Pauline (Holstein), owned and developed at Hillcrest farm, Norwood, Ontario, by G. A. Brethen, beginning her record three days after freshening in the semi-official A.R.O., has produced 29,007 lbs. of milk, 890.6 lbs. of fat (111.25 lbs. of butter, 80 per cent fat), in 365 consecutive days. This record makes her the Canadian champion milch cow by a wide margin. Only three cows in the world have exceeded her year's milk production, one being in California, another in the State of Washington, and the third is owned in Massachusetts. Her nearest Canadian competitor is the well-known "Madam Posch Pauline," owned in British Columbia, who has a record of something over 27,000. Rauwerd averaged nearly 90 lbs. of milk a day for eight months and for that period exceeded the world's champion cow, "Tilly Alcarta" by a substantial margin.

Writing to the Ottawa Valley Journal, the owner, G. A. Brethen, says in part:

"Rauwerd's production throughout was entirely normal and at no time did she appear at all worried or give any indication that to her there was anything out of the ordinary in the making of twenty-nine or thirty thousand lbs. of milk. That this fact was appreciated by others was invariably evidenced by the remarks of every visitor to the farm who commented as to her splendid physical condition. To every one of those, as to ourselves, it was not so much what she had done as ho wshe did it. After having produced over 26,000 lbs. of milk in ten months and travelling 500 miles in a show circuit to retain enough bloom to win second money in a strong class of eighteen at the Canadian National Exhibitioin, Toronto, and first prize at the Central Canada Exhibition, Ottawa, in the strongest Holstein classes ever brought out at these shows, is additional proof that to Rauwerd the making of a 29,000 lb. record was a pleasing an undertaking as is the 6,000 lb. production of the ordinary cow. In this connection we might say that had we not exhibited her at the above mentione dshows her reocrd would have been increased by 400 or 500 lbs. of milk, yet we believe that the opoprtunity given her at these important exhibitions to establish the fact that she possesses type as well as extraordinary production ability and that testing, judiciously conducted, is not necessarily injurious but positively beneficial in developing the cow, is sure to prove of more lasting benefit both to the cow and the breed than a few additional pounds to her record.

"'Like begets like,' probably recog nized as the most potent principle in breeding, is in the case of Rauwerd strikingly established as she is granddaughter of the great Pietertje Count de Kol (who had thirteen daughters with an average daily milk production of 100 lbs.) through a son who has a full sister with a record of 109 lbs. of milk in one day and over 30 lbs. butter in seven days. Rauwerd has proven true to her ancestry and has not only shown extraordinary production ability herself but through her first daughter ni milk, De Kol Mutual Countess, former Canadian champion, junior three year old (present champion in eight months division), she has proven her power of reproduction in the highest degree. The combined semi-official record of this cow and her junior three-year-old daughter of 49,679 lbs. of milk and 1980.75 lbs. of butter in one year is equalled we believe by but one other mother and daughter that ever lived, and establishes in no uncertain way that this family are not only producers but reproducers, "the kind that breed on." The knowledge of these facts is considered sufficeintly important to cause her owner to use exclusively in the breeding operations at Hillcrest Farm the two sons of Rauwerd and her grandson, the only son of her daughter, De Kol Mutual Countess.

"In regard to feed and attention given her during the test, I might say that home grown feed formed a very large proportion of her ration. I am inclined to think that possibly mangels or turnips were of really more value to her in the production of a large flow of milk than any other food. She consumed regularly around 100 lbs of roots a day while in the stable, and we have no doubt but that these were of great aid in maintaining her in a strong, physical condition. Oil meal, cottonseed, gluten, with some distillers' grain combined with bran and chop, varied from time to time to increase it palatability, formed her grain ration, while ensilage, clover hay and pasture supplied the roughage.

"Care was always taken that she had an abundance of water and salt. If she showed any inclination to fall off in production, we as promptly as possible got busy to ascertain an dcorrect the cause before any serious loss resulted.

"Rauwerd has finished her year in the best possible condition and as she is now well on in calf, beliveing the past year's work has been merely a developer, we look forward to her accomplishing even greater things in the future.

"We wish to express our appreciation of the kind interest exhibited by fellow breeders from all parts of Can ada in Rauwerd and her record, and while we regret that we were unable to bring the highest honors in milk production to Canada, still we have the satisfaction of knowing that her 29,000 lbs. record was attained in a large measure by over 30,000 lbs. ideal, and this fact should prove an inspiration to ourselves and others to go forward to even greater things in our work with the Holstein cow."

A Word to the Wise should be Sufficient.

Scotsburn, N. S., Dec. 20th, 1915.
The Maritime Farmer:

May I be permitted to call the attention of your readers to a movement taken up by a number of Agricultural Societies last fall.

The work of cow testing, on the keeping of records of milk and butter fat produced by each cow in the herd, has now been going on for some years among the patrons of Scotsburn creamery, and members of Cow Testing Associations along the Shortline. While splendid results have been obtained and phenomenal increases achieved, yet many of the best dairymen believe that still greater things would be done with an improved class of bulls with which to grade up the herd. While many excellent specimens of the different dairy breeds have been owned by the Agricultural Societies and private individuals, few of them can produce an official record of performance for their dams.

Believing that the breeders of pure bred dairy cattle owe it to their customers and to the public in geenral, for the generous assistance rendered them in various ways, to furnish records of performance at the pail, that can be relied upon, a number of agricultural societies in Pictou county adopted the following resolution at their last annual meeting:

Considering the importance of the bull in building up a dairy herd, and

Considering the great number of animals carrying registration, names and numbers, which so far as production goes are little better than the common scrub, and

Considering that the live stock branch of the Dominion Department of Agriculture tests the cows of pure bred breeders free of charge and at a minimum of cost to the breeders,

Therefore be it resolved that the members of this society strongly urge upon their directors the importance of purchasing bulls from record of performance dams, and that if it be impossible to secure such bulls that they will purchase no bull whose dam does not possess an official record without making strenuous objection to the breeder of the bull.

Now then, breeders, it is up to you. When such men as the members of the agricultural societies at Rogers Hill, Lyons Brook, Scotsburn and Elmfield say that a big preference will be given for records, they mean it and will live up to it. Also it means that many more will rapidly follow their example.

This demand does not confine itself to farmers using bulls of the four principal dairy breeds, but breeders of grade Shorthorns are just as insistent on knowing accurately of doings at the pail.

Records that can be relied upon are what they will insist on having in the future.

Sincerely yours,
ROBT. T. STEWART,
Secretary Scotsburn Creamery Co. Ltd.

Ability of Bacillus Coli to Survive Pasteurization.

The presence of bacillus coli in pasteurized milk is generally interpreted as an indication of insufficient heating or of fresh contamination owing to carelessness after pasteurization. The interpertation is based on the low thermal death point of the bacillus. Several workers have studied cultures during recent years and have stated that this organism was easily destroyed at temperatures below 60° C. Sometimes, however, it has happened that much higher temperatures (e.g. 70-72°) were necessary to destroy the organism. With a view to determining with more exactness the fatal temperature for B. coli and its relation to the temperatures of pasteurization, the writers carried out the following researches.

The fatal temperature for 174 cultures of B. coli isolated from the faeces, milk and cream of cows, from human faeces, flies and cheese, showed considerable variations when the cultures were heated in milk for 30 minutes under conditions identical with those of pasteurization. At 60° C., the lowest temperature, of pasteurization, 95 cultures or 54-6 per cent survived; at 62.8° C., the ordinary temperature of pasteurization, only 12 or 6.9 per cent survived. One culture was not destroyed at 65.6° C. on first heating, but succumbed when reheated several times. There is a marked difference in effect of heating to 60° C., and to 62.8° C., 87.3 per cent of the cultures which survived at 60° C. being destroyed at 62.8° C. There were considerable variations in the fatal temperature of the bacilli which survived at 62.8°; on reheating to the same temperature the twelve cultures which survived, several succumbed, and with each reheating different results were obtained. It appears that a temperature of 62.8° C. maintained during 30 minutes is the critical temperature for C Coli. It was found that in all the 174 cultures studied, the thermal death point for the majority of the individual bacilli was low, but the cultures were able to survive pasteurization owing to the resistence of a small number of individuals.

The use of B Coli as a test of the efficacy of pasteurization is complicated by the ability of ceratin strains to survive heating to 62.8° for 30 minutes and to develop rapidly when the pasteurized milk is maintained under or-

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dinary conditions of temperature. The presence of a large number of B. Coli immediately after heating may indicate defective treatment of the milk. If the milk is pasteurized for 30 minutes at 65.6° or more, it may be assumed on the strength of these experiments that none of the bacilli will survive. Under these conditions the B. Coli test may be used to control the efficiency of pasteurization. It is possible, however, that the study of a greater number of cultures would reveal the presence of strains of B. Coli capable of a greater number of cultures capable of surviving this or even higher temperatures.—S. H. Ayers, and W. T. Johnson, Jr., in Journal of Agricultural Research, Vol. III., No. 5, pp. 401-410. Washington, February, 1915.

Common Cows Often Capable Milk Producers.

As a whole, the "natives," or common cows are inferior in the milk giving property to any of the adiry breeds; but there are remarkable exceptions. My father had a native cow that, when fresh, and well fed, would give about 24 quarts of milk in 24 hours. She was a large cow, but had no distinguishing marks by which experts think they can determine a great milker. She was not wedge shaped. She did not have a small neck, nor the nervous temperament. Her head and horns were large, an dresembled those of an ox. The only dairy marks she had were large milk veins and a capacious udder.

I have owned several remarkably good common cows. The best one resembled my father's prodigy in everything but color, and was almost her equal in milk production. She was a voracious eater, and not at all particular about what she ate. She devoured whatever decent feed was placed before her. When turned into the pasture she did not follow the example of the other cows and run all over the field before commencing to eat, but began feeding as soon as through the gate. She was not a bright cow. On the contrary, she was stupid and stolid. When turned into the stable through the door, which the herd usually entered, she would find her place every time; but when let in at the opposite door she was sure to make a mistake, and take possession of another cow's stall on the opposite side of the stable from her own.

I had a pure-bred cow about the equal of my native as a milk producer, but not quite her peer as a butter maker. Naturally she was of a suspicious disposition, apparently always expecting some treachery, or breach of faith on the part of her owner, and no amount of kindness would make her a confiding animal to her feder or milker. I bought her when full grown. I think she must have inehrited her suspicious disposition from some near ancestor that had been abused. She must have known that the removal of the milk from a full udder made her feel more comfortable, and yet at night when her udder was very full it was a hard matter to milk her without kicking. Like all uncommonly good cows at the pail, she was a hearty eater, and had room to store a large amount of food while undergoing the process of milk manufacture. No cow in the world is capable of extracting a large quantity of milk from a small amount of material. They must have milk producing feed and a plentiful supply of it.

Cow Peculiarities

I have had cows that were naturally very friendly—would follow me when I crossed the pasture field, although they could see I had no feed or salt for them, and happened there on other business. One of our cows would bawl to be milked if neglected when her turn came. Several of us had been milking one night, and she was skipped by mistake, and we were leaving the barn when she commenced bawling and I went back and milked her.

Cows have their likes and dislikes. The hired man had been milking one of the cows for a long time. One night he being busy with the horses, I sat down to milk the cow. She offered no resistance, would not "give down" her milk to me. As soon as the hired man came and took the pail, she gave down the milk.—J. W. I.

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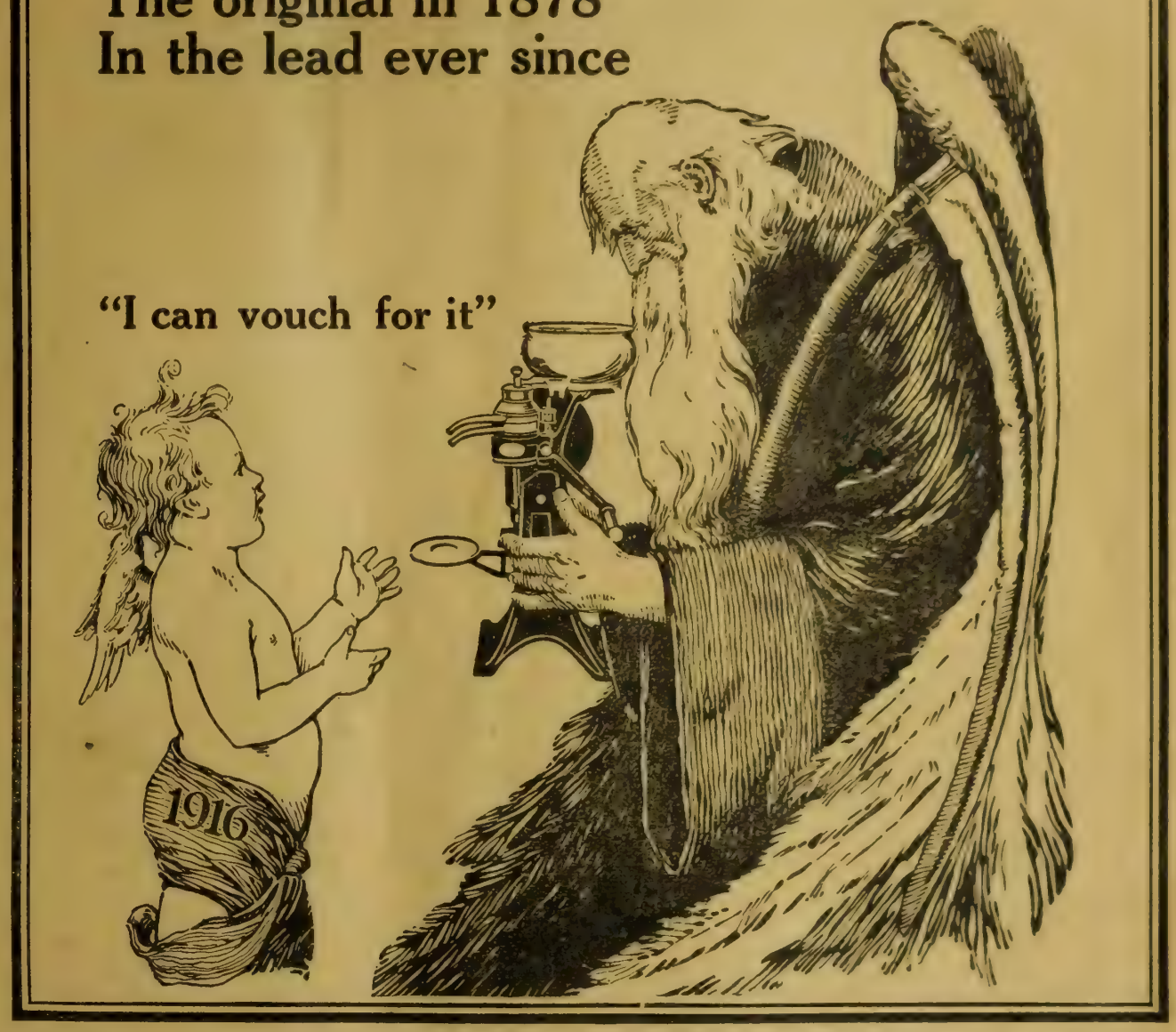

Be Kind to Cow That Holds Up Milk.

Cows will sometimes refuse to "give down" their milk, especially to a strange milker, while a rough milker will often upset a herd. The remedy in these cases is to get rid of the offending milker, for among dairy cows gentleness and kindness should always rule. If a cow evinces a dislike for one milker or a preference for another, it is best to humor her and hand her over to the care of the favored individual entirely. The superiority of women as milkers is generally admitted by all experienced cow keepers, and the obstinate retainer of her milk will often prove tractable with a woman, while obstinately refusing it to a man. Unfortunately, however, women milkers are scarce.

When a cow persists in holding her milk a common remedy is to attempt to divert her attention from the operation of milking by providing some tempting food. The question of feeding at milking time is a debatable one, and there are arguments against it, but nothing makes cows so much at home in the dairy barn or brings them to it so cheerfully as some wholesome food. As a general rule, the relationship between the cow and the milker is good in dairies where feeding at milking time is well established.

In some cases, with a strange cow patience wins, and if the milker sticks to his stool and keeps rubbing the udder and stroking the teats, he will tire out the most fitful of cows. In other cases it seems a better plan to leave the cow for a time and return to her a half an hour alter. In extreme cases it may be found more effective to refrain from milking until the distension of the udder begins to cause incvonvenience, but there are drawbacks to this, and if carried too far there may be a case of garget or a bad quarter.

Putting a weight over the loins is a favorite remedy with some, and I have seen heavy chains and bags of sand, earth, or wet browers' grains employed in this way. The idea is that the weight on the loins has an effect on the ability of the cow to control the voluntary muscles of the udder, which, under normal conditions, no doubt she can, but such measures are calculated to upset a nervous cow and can never conduce to a big yield of milk.

It is well to bear in mind that the udder is not simply a reservoir for storing milk, which can be emptied by overcoming the resistance of the cow. Secretion goes on while milking is in progress, and is favored by the gentle stimulus of the hand of the good milker, or the calf's tongue and palate. There is no doubt but that kindness, patience and perseverance are the mosst successful means to overcome a disposition "to hold the milk."—W. H. U.

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Veterinary Replies.

Cow Ailing after Calving.—I have a cow, six years old, calved two weeks ago, who goes off her feed. Each year after calving she gets listless and loses appetite, and goes off in milk as well. She calved and cleansed well, but in a few days got constipated. We gave her a dose of oil, and she seems to be picking up a bit, but is not giving enough milk. She picks at her grass, never eating a hearty meal. Locally her condition is called "slow fever," "low fever." Could you advise what to do? She was such a promising cow, with a beautiful udder, had been dry three months, and had a very well-nourished heifer calf. You can understand that three months dry and three months ill (as she was two years ago and six weeks last year) takes the cream off the milk and "gives one furiously to think," whether she is worth keeping to breed from.—Marlow.

Ans.—Evidently the cow gets a milk attack of parturient fever, which may be caused by wet and cold, unsuitable food or the absorption of septic matter, and you should inject and wash out the genital canal with a 1 oz. to 50 oz. solution of permanganate of potash daily. Give her a dose of Epsom salts, and afterwards twice daily one of the following powders either in her food or as a drench shaken up in gruel: Sulphate of quinine, 20 grains; nitrate of potash, 1 drachm; powdered gentian, 2 drachms; powdered aniseed, 2 drachms. Feed her with some crushed corn, malt culms and mashes. As you have had trouble with her each time after calving it would be better to dry her off and fatten her for the butcher.

Stomach Worms in Sheep—In a recent issue you give a very interesting and instructive article on stomach worms in sheep. We should be glad if you could continue the subject by giving us some practical information as to how to deal with the trouble and what medicine is advisable. Also does this treatment apply to all worms in sheep?—T. J.

Ans.—There are no less than eighteen kinds of round worms which may infest one or another portion of the abdominal tract of the sheep, and are found in either the fourth stomach, small or large intestine, and owing to the bulky nature of their food are often rather difficult to expel. Then, again there are the flat or tape worms, of which thehre are no less than thirteen different kinds. When sheep or lambs are affetced with any of these thirty-one known different varieties of abdomenal worms, they lose condition, and in some cases are affected with parasitic diarrhoea, caused by the irritation to the stomach and intestines bringing on gastro-enteritis. In the case of round worms in lambs, it will be noticed that the lambs are doing badly and losing flesh, and are also affected with watery, profuse diarrhoea, and increasing weakness, death often taking place in from three days to three weeks. Should one happen to die, it is a good plan to open it, taking care that the contents of the fourth stomach do not escape, and make a search to determine whether death is caused by round or flat worms, as the treatment differs slightly for each kind. A useful cheap drench can be made as follows: Take 4 oz. of powdered sulphate of copper, 4 oz. of mustard, and well mix with 3 gallons of rainwater in an enamelled bucket. When the sulphate of copper is dissolved it should be given in the following doses: Lambs from three to six months old, 2 oz.; six to nine months old, 3 oz.; nine to twelve mbnths old, 3½ to 4 oz. Give after a twenty-four hours' fast and allow no water on the days of drenching. Another powder which answers very well with sheep is powdered arsenic, 1 drachm; table salt, 4 oz.; powdered sulphate of iron, ½ oz.; powdered areca nut, 2 oz.; powdered nux vomica, 2 drachms. Well mix and divide into thirty powders. Give one daily to each adult sheep. Thymol and santonine are among the best drugs we have for the expulsion of round worms, but, since the war, have become so very dear and so nearly unattainable that they cannot be used for animals. Tape-worms can be easily recognized, and are often seen in the droppings, looking like small pieces of white, flat tape, and the animals infested should be first given a dose of castor oil, 2 oz. to 4 oz., according to size. After this has operated, give from 1 drachm to 2 drachms, according to age, of freshly powdered areca nut, and the dose repeated in three or four days' time. General treatment may be adopted as follows: After having expelled most of the worms, it is best to give the sheep a tonic which will also help to prevent reinfection and expel any stray worms that may have remained. A powder composed of powdered sulphate of iron 3 drachms, table salt, 5 oz., powdered fenugreek 10 oz., is suitable. Dose for a lamb one tablespoonful; from six to nine months old, one tablespoonful and a half; older, two to three tablespoonfuls daily. This should be mixed with some dry trough food, which should include some cake, crushed oats or meal. As a prevention, separate all the healthy animals and if possible place on clean pasture, turning other animals, such as horses, on the ground to graze. If the pasture is poor and worn out it is worth while considering the desirability of plowing it up. Then, again, dressings of salt, lime or sulphate of iron are worth trying. Where possible after giving the worm doses it is best either to burn or well coat the droppings with plenty of unslaked lime to destroy the eggs.—Southern Vet in English Exchange.

Gilson Engine

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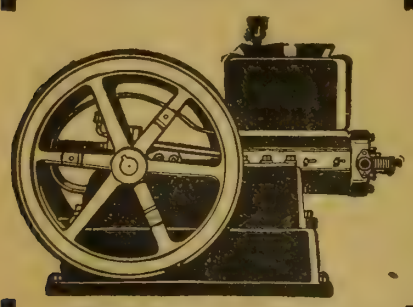

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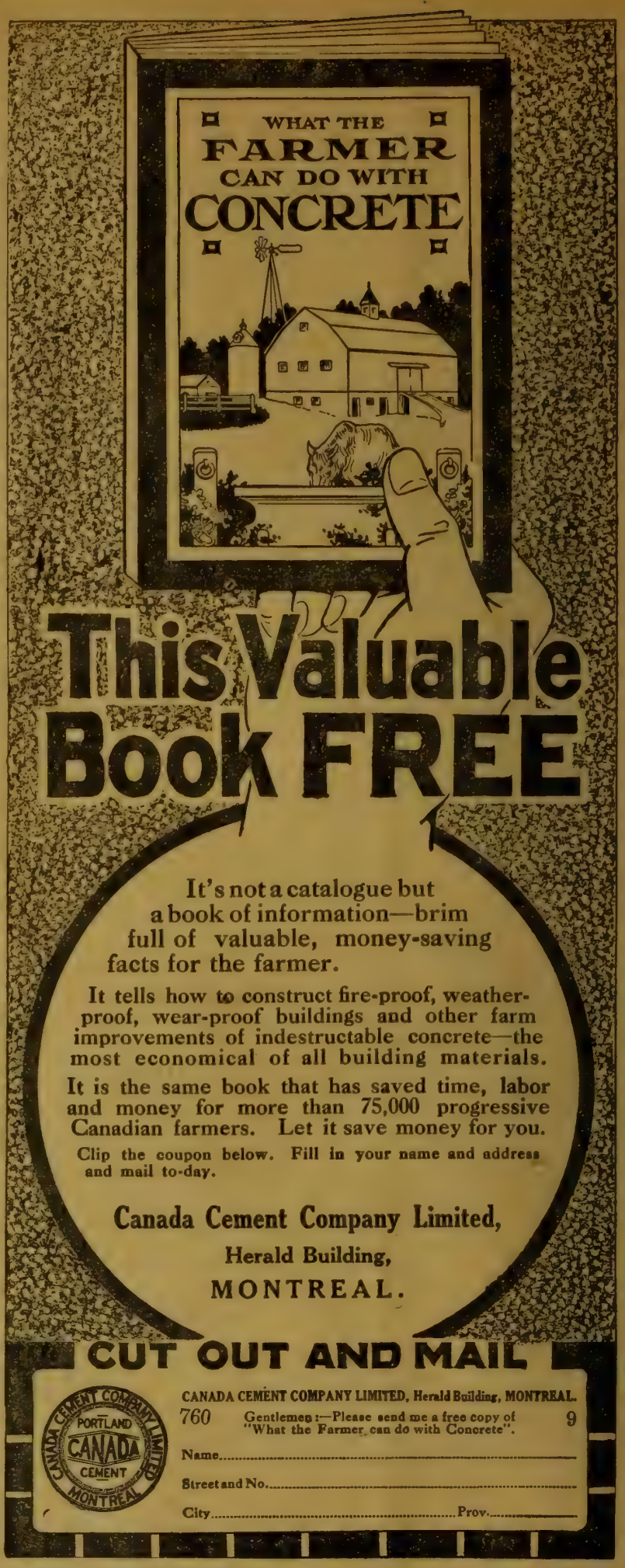
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Keeping Lambs Healthy in Summer.

It is during the wet summers that parasitism prevails among flocks in the eastern states. Chiefly the parasitism is from the stomach worm, which gives the disease variously termed black scours, lamb cholera, or paper skin. The cause of the disease is a minute worm living in the fourth stomach of the animal and causing there terrible derangement of the digestion, besides absorbing a great deal of the animal's blood.

Treatment is not always satisfactory, although much good can be done by the use of gasoline or coaltar creo-

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SYRUP

The proof of Mother Seigel's Syrup is in the taking. That is why former sufferers, whose vitality was being sapped by Indigestion, say it is *just excellent* for stomach, liver and bowel troubles. Thanks to Mother Seigel's Syrup, they are now strong and well.

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If you are afflicted by Indigestion or other disorders of the stomach, liver and bowels take Mother Seigel's Syrup regularly for a few days; long enough to give it a fair chance to make its beneficial influence felt. Then note the improvement in your appetite, your strength, your general condition. 3015

HEADACHES, BILIOUSNESS
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The 100 bottle of Syrup contains three times as much as the 50c size.

sote. Not to talk of treatment now, let us see what can be done by way of prevention. Frequent changes of pasture is the most essential thing, and the avoidance of small and richly grassed lots where the droppings of sheep have been much deposited for a long time. The infection comes from the mothers that in their excrement deposit the eggs upon the grass. These crawl a little way up on the fresh green blades and are taken in by the lambs. It is clear that if the lambs are born early and are separated from their mothers as soon as weaned and put on good clean grass the danger of infection would be greatly lessened.

Infection will not come much from clover or alfalfa pastures, nor from grazing on new land recently seeded. Sweet clover pasture will not often affect the lambs. If the lambs are very valuable, and it is difficult to put them on clean, sound grass, they would be better put in an airy shed and fed on the soiling plan, and be given also some grain. Thus fed they will keep healthy, if they have no grassy lot in which to run. It usually is the small lot richly-grassed that carries the most germs, because there the sheep have more often fed. Above all things change as frequently as convenience will permit. When placed on a safe pasture they will be free from danger of infection during June and July for a period of ten days. If then they can be moved onto clean grass they can after a while come back again to the pasture first used. There is no doubt that in the change of pasture lies the greatest advantage in combating the stomach worm.

We have tried tobacco feeding also with good results as a preventive. The tobacco is cheap, and I think harmless. One can get stems or cheap leaves from cigar factories. Moistening with salt water, not too briny, he can place it at the command of the sheep, and they will eat a great deal of this during the summer. In our experience turpentine has proved useless, or nearly so. Gasoline and coaltar creosote has been highly efficacious, but it has been several years since we have given a dose of medicine to a sheep.—Joseph E. Wing, in Breeders' Gazette.

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"Easy-Pull" Manure Spreaders
are
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That is one thing that should interest New Brunswick farmers in them.
Moreover, they are so EASY to LOAD and so EASY to PULL that all who intend buying Spreaders should seriously consider our home products.
The Smith Foundry Co., Limited,
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Send in 5 New Subscribers to the Maritime Farmer at 80c each, and get a beautiful piece of Cut Glass or Silverware.

Wool.

Care During Fall and Winter

During fall and winter care should be taken to keep the fleeces of the flock as free as possible from chaff, chaffy straw, dirt, etc., from the feed. The racks of the sheep shed should be built upright, not overhanging the sheep's back, which latter form is most objectionable. If the flock has access to a straw pile, the open side or sides should be kept straight up and down so that the sheep cannot walk under overhanging straw, and the fleeces thus get filled up with chaf, etc. The shepherd should be as careful as possible in filling the racks or throwing down feed to see that it does not light on the backs of the animals. For this reason it is usually advisable o shut the flock out of the sheep shed when filling troughs or racks. The sheep shed should be so ararnged as to render it unnecessary to carry fodder through the flock, or to throw it down where dust or chaff may fall on the fleeces. Cockle burr, or burss of any description should be avoided. If in pasture mow down. If in seed do not use for sheep.

Cleanliness

Sheep should be kept in as clean and dry quarters as possible and all sheep should be docked. Prior to winter they should be tagged or clipped out, the dirty clotted portions of the fleece around the exterior being cut away in this operation. Sheep will not do so well if kept on damp footing or with damp fleeces. The careful sheepman will see that there is abundance of bedding, clean floors, absence of draughts, but ample ventilation and a good roof over his charges, and will be amply repaid for his troubles. Laxative feeds, or feeds which produce scouring, such as frozen oat sheaves, millet, etc., are also undesirable from the point of view of clean fleeces. Ewes at lambing time should be taken especial care of, and a dry, well bedded place or, if outside, a high, dry knoll should be selected for a lambing pen. Sheep must be kept in good, healthy condition with plenty of wholesome food and pure water throughout the year if they are to produce a maximum quantity of sound wool.

The Primrose

A "One-Adjustment" Cream Separator

BEFORE the **Primrose** came, cream separators were machines of many gears and bearings, requiring all sorts of adjustments all the time. If you ever owned one, you know what that means. It was tighten this, and move that—adjustments that you never felt quite safe in making yourself. You knew you were losing cream, but couldn't help it, and you found even a wasteful separator much better than hand skimming.

All those adjustments are now done away with. The **Primrose** is, in truth, a "one-adjustment" machine. There is only one place where wear affects the work of the **Primrose**, and that is on the hardened steel point that carries the weight of the whirling bowl. And since this point is made of finest tool steel, tempered like a fine razor, you can see that the adjusting will not take much of your time.

Ask the **Deering** local agent, who sells **Primrose** cream separators, to show you this machine that anyone can keep in perfect working condition all the time, or, write us at the nearest branch house for complete information. If you're going to buy a separator, you'll never regret the time you spend studying the **Primrose**.

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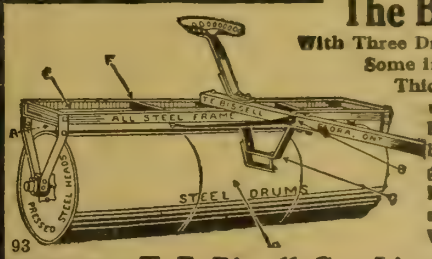

With Three Drums and Strong Rigid Steel Frame. Some improvements are: Heavy Steel Axle. Thick, Heavy Steel Plate, Drums Riveted, up to stand any strain, Roller Bearings Runs like a bird. Full particulars free by mail, or ask your dealer. None genuine without the name "BISSELL." Look out for it. This Roller will stand hard work and lots of it. Write Dept M for free catalogue

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T. E. Bissell Co., Limited, Elora, Ont.

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience,** we know better than any doctor; and thousands have proved there is hope even **for the hopeless** in my method of home treatment. If you suffer from **pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid,** to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home **treatment, and when you are cured,** my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—**young or old.** To **Mothers of Daughters,** I will explain a simple home treatment which speedily and effectually cures greensickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten days' trial, and if you wish to **continue,** it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer. **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask** for the **free treatment to-day,** as you may not see this offer again. Address:

MRS. M. SUMMERS BOX 309, WINDSOR, ONTARIO

THE HORSE

Confidence Must Exist Between Driver and Horse.

The Well-Broken Animal Must Respond to the Will of His Master

A well broken horse is one that always responds to the will of the master, be he rider or driver. For a horse to be well broken means that much training and experience have been the lot of that animal. The term well broken is oftentimes misleading. A horse may be perfectly well broken on the farm and if taken to the city will be almost unmanageable. Only a few years ago many horses were well broken to farm work and to all that might be encountered on the road to town. Then almost suddenly the auto appeared. Men and drivers were afraid. Many were the wrecks that occurred behind teams that previously had appeared perfectly well broken.

A well broken horse should be required to prove his good qualities. True the gypsy and the professional trader have decreased in a large percentage, yet there are t hose who would say anything in a horse trade. David Harum of fiction sold a horse guaranteed to stand without hitching. The beast certainly did stand without hitching, no matter if his master desired to plow corn or drive to the village. In spite of all persausive efforts the old nag stood. The David Harum of actual life promises that any outlaw is well broken and will consider that he has performed a wonderful feat of business by defrauding some man whose conscience is less seared than his own.

To give a young horse the right start when first encountering new experiences is a big factor in pulling him into the class that is permanently well broken and which under trying conditions will have confidence in the driver. Sometimes the unexpected occurs without anyone's being to blame.

The horse must have confidence in the driver else he cannot appear to be and cannot be well broken. Panic-stricken drivers have doubtless caused more than 50 per cent of road accidents. It is doubtful if any horse can be trained to every experience that it may encounter. It is doubtful if that is necessary. If the horse has ordinary intelligence he can be trained to a variety of experiences and at the some time trained to have confidence in his driver. Having been trained to have confidence in his driver he is safe under all that may ordinarily occur, provided of course that the driver has had experience and possesses self-confidence and some skill.—H. E. McCartney.

Chronic Laminitis.

J. M. H.—"We have a mare five years old that has colt born in June. The mare is stiff in front and seems to be weak in both hind legs and she walks as if she was too heavy behind for her hind legs. Legs spring down nd when walking props herself up with her front legs and walks slowly. She worked for about a week on a gang plow before she had colt and has not done any work since. We have had her turned out with the colt and put her in at night. This is her first colt and both are in fine shape. She has not been over fed in any way. There is nothing else wrong with her that we can see."

Answer—Your mare is suffering from chronic laminitis—founder. If you examine her fet, especially the front ones, you will find the soles dropped and quite likely the pedal bones may be exposed. The best treatment to adopt is shoeing with shoes well hollowed out so that they do not touch the sole anywhere. Put leather pads with tar and oakum under the shoes, change the shoes every three weeks. The case may also be further improved by the application of a blister around the coronets of each affected foot. Clip off the hair around the coronet, then well rub in for twenty minutes, each foot, the following blistering ointment: Powdered cantharides, 3 drams; biniodide of mercury, 3 drams; fresh lard, 4 ounces. Mix well. This is sufficient for both feet. Tie her head up for forty-eight hours so that she cannot reach the blistered part with her mouth. Then wash off the blister with warm water and soap and smear on vaseline every three days. If necessary repeat the blister in three weeks.

Ringbone—Sidebone.

New Subscriber.—"I bought a mule some three months ago. When I bought her she had one shoe on one front foot and a touch of side bone on the other which never bothered her. I pointed out the shoe to the owner and he said she pulled the other one off in the mud as the blacksmith put it back on the heel because of the sidebone. I drove home (about 250 miles in eight days) and noticed no lameness, but when I pulled the shoes off she started to limp on that foot, and when she get on the road she is real lame. She seems a little better after she has been out of the barn a while excepting when on the road, where she gets worse. She walks slightly on the toe. I can find no part of the foot painful to pressure but fancy I can note a slight thickness round the pastern as of a ringbone forming, but I may be wrong. It looks as though the shoe I have referred to was put on to ease her before I got her and to help cure her trouble, whatever it is. Also give me treatment for long standing case of sidebone."

Answer—The thickness around the coronet indicates that a ringbone is forming. The inflammatory action may possibly be overcome by firing and blistering. The counter irritation thus set up would probably check the deposit of bone and so stop the lameness. The same treatment is in order for sidebones. It will be necessary to S. Exchange.
employ a veterinarian to operate.—U.

Chronic Founder

Subscriber.—"1. Last spring I bought a heavy horse. Was very poor and tender in front feet. I turned him on the grass and in a month I could not tell he had been lame, but all at once he got so lame that he could hardly awlk and has been lame ever since. He does not put his feet down straight, but keeps his weight on the back part of the hoof.

"2. Both legs are swollen about twice their natural size around first joint and are very hard.

"3. Have also some young mares running on the grass that I bred, both last summer and this, to different horses, but can not get them in foal. Is it safe to give these mares some drug?"

Ans.—1. Your horse has had repeated attacks of "laminitis" (founder), which has resulted in descent of the pedal bone through the sole. Carefully examine the foot. You will find the sole bulging between the point of the frog and the toe. The only thing to be done to make the horse useful is to apply shoes with thick walls, well hollowed out so that they do not touch the sole, and leather pads with tar and oakum packing.

2. The swellings above the hoof are "ring bones," which may be a complication of the laminitis. A good firing and blistering may afford relief. Of course, the operation must be done by a qualified veterinary surgeon.

3. Drugs are useless in these conditions. The causes of barrenness are many, among them are extreme poverty or the reverse, plethora, diseases of the ovaries or other parts of the generative system. In very many cases of barrenness there is a malformation of the neck of the womb which may readily be rectified by a veterinary surgeon at the time of the service. The cause must be sought for an removed. If too thin, feed up. If too fat, reduce rations.

Horse has Descent of Coffinbone.

J. M.—Have driving horse on which I noticed a ring-bone appearing about a year ago. Used ring-bone paste last winter but did him no good. Got him fired last spring and now that the firing spots have healed his foot has gone bad in the bottom, the hoof rotting away and a gray greasy substance exuding from the bottom and in back of the heel. Horse has been out most of the time. What is the trouble, and if curable, how can it be done?"

Answer—Your hourse is suffering from descent of the pedal bone due to long continued inflammatory action around the coronet and in the foot. Unless he is a very valuable animal he may not be worth the trouble and expense of treatment. He will never become sound. However, the best thing to do in a case of this kind is to apply a shoe which is well hollowed out so that there is no bearing on the sole, then after well disinfecting the diseased sole with pure creolin, cover it with pine tar and oakum, which is kept in place with a leather pad. Change the shoe and dressing every two weks.

The Horse in Warfare.

From the days of earliest history the horse has been closely connected with warfare, and in more modern times has greatly contributed to the making of British military annals. Such charges of cavalry as those of the Light Brigade at Balaclava, the Scots Greys at Waterloo, the Guards at Kassassin and the 21st Lancers at Omdurman have furnished military writers and painters with subjects of the highest order. Many a battle has received the casting vote from the cavalry, as the horses prove a means of quick transit and the thunder and shock of a cavalry charge on a weakening force generally proves a demoralizing factor. Also it is to the horseman that the duty falls of cutting up detached parties before they can reform or get into touch with the main body, and other duties or pursuit.

The pathetic side of war is a phase that the horse shares with his human comrades, though it is said that much of his cries on the field after battle are from loneliness as much as of pain.

There is a famous picture that was hung in the Paris Salon representing an after-battle scene in the Franco-Prussian war. It shows a group of cavalry horses, after having lost their riders, dashing across the field after darkness has set in, presenting a picture of unchecked madness.

SYDNEY BASIC SLAG.

We strongly recommend all farmers to arrange for their supplies without delay. The demand is constantly increasing and it looks as if there will again be a shortage next season.

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MR. C. T. LOGAN, R. R. No. 1, Amherst, N. S.

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Let us know the size of any roof you are thinking of covering and we will make you an interesting offer.

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The comradeship between men and horses in the Service is very marked. "Make much of the horses," was a common phrase in South Africa, and in that campaign, it was that the Mounted Infantry demonstrated their great usefulness. That branch of the Service is an example of horseflesh infused into infantry work.

A military training is of especial benefit where horses are employed, as the soldier gets a good physical training in the riding school and at the same time gets a spirit of confidence while around horses. In military competitions one sees combats between, say, a mounted man armed with a sword versus a man with a rifle and bayonet. Occasionally a cavalryman will act as an infantryman, and oppose a mounted comrade. Then one sees a well contested fight, as, where the infantryman may give ground to the onrushes of the horse, the dismounted cavalryman stands his ground, as he knows that the horse will not tread on him. Horse sense is of great assistance in the military training of the modern soldier, and those of the British Army who have been through the riding school are graduates of an institution said to be the finest of its kind in the world, or at least the most thorough.

The present great European war has brought into prominence the usefulness of motor driven vehicles. These are co-operators rather than competitors to the horse, as they take off his shoulders the task of a merciless haul over roads that become a very hard trial on all means of transport. Gasoline has no more driven the horse from the Service than it has driven him off the farm. If it were so, or likely to be so, the present high prices would not rule in the horse market.

The military horse is essentially a good scout. Of these hazardous duties he is of special aid to his rider, by uniting equine intelligence with the human intelligence of his companion scout. He is cognizant of the presence of horses in his vicinity long before some men may be aware of the fact; this is due to his superior sense of smell. He soon acquires a soldier spirit and becomes partial to the environment of barracks and camp. As a soldier, his fame may live after him as it has done in several cases, where a silver mounted hoof on the regimental mess table remains as a memento of one whose duty was faithfully performed.

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited

ABSORBINE *STOPS LAMENESS*

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered.

Horse Book 9 K free.

ABSORBINE, JR., antiseptic liniment for mankind. Reduces Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, heals Old Sores. Allays Pain. Will tell you more if you write. $1 and $2 a bottle at dealers or delivered. Book "Evidence" free. Manufactured only by W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.
Absorbine and Absorbine, Jr., are made in Canada.

Intestinal Worms.

Subscriber.—Colt, 18 months old, has run in good pasture all summer, but is still in poor flesh, quite often passes small white worms, about two inches long, with manure.

"2. Also a horse has a sore tail, all the hair came out of his tail near the end, leaving it swollen and very sore."

Answer—1, Intestinal worms are mostly seen in horses that are in poor condition, and an essential part of the treatment is to improve the appetite and powers of digestion. A tonic composed of the following may be found useful: Gentian, 4 ounces; powdered ginger, 2 ounces; salt, 4 ounces; fenugreek, 2 ounces; powdered nux vomica, 2 ounces. Mix well, and give one tablespoonful in the feed night and morning. Injections into the rectum of a solution of quassia chips, one half pound soaked in a gallon of cold water over night, then strained and the clear liquid to be injected once daily for a few days will remove any worms that may have been lodged or be found in the rectum.

2. It is possible that your horse has received some injury to the end of his tail such as being pinched in a door. Sometimes a mischievous person will tie a string on the tail—this must be looked for—with the result that the part may die and slough off. It may be necessary to have the diseased portion amputated, which operation would necessarily have to be done by a veterinary surgeon. The thorough cleansing of the part daily with a two per cent creolin solution and the application of a drying powder such as boracic acid, 8 ounces; iodoform, ½ ounce; starch, 4 ounces, may overcome the trouble.

Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT No COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
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RINGBONE,
PINK EYE,
SWEENY,
BONY TUMORS,
LAMENESS FROM SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.

REMOVES

BUNCHES or BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINARY REMEDY

Always Reliable. Sure in Results.

None genuine without the signature of The Lawrence-Williams Co. Importers & Proprietors for the U.S. & CANADA. CLEVELAND

Finds Caustic Balsam to be Reliable.

I can say that I have for the past three years been a user of GOMBAULT'S CAUSTIC BALSAM, and have found it to be all that is claimed for it, and have in a great many instances recommended its use to others.—R. D. KIRK, Antigonish, N.S.

Canadians Appreciate Caustic Balsam

I have been selling GOMBAULTS CAUSTIC BALSAM for years and it is giving my customers the best of satisfaction. I have also used it myself on different ailments with the best results. Too much cannot be said in its favor.—W. T. PRICE, Berkeley, Ont.

Sole Agents for the United States and Canada.

The Lawrence-Williams Co.

TORONTO, ONT. CLEVELAND, OHIO.

Tonic for Horse in Poor Condition.

Chronic Indigestion or Worms May be Cause of Dry Hair and Loss of Flesh

A horse about eleven years old seems dry in the hair and does not gain in flesh. Is troubled with a cough after drinking.

2—Mare becomes lame in the hind leg after driving about half a mile, and if driven further will fall down. What is the trouble and please advise the remedy.—W. D.

Your horse is probably troubled with chronic indigestion or may have worms, a bad mouth, etc. Have your horse's teeth examined and if necessary floated. Prepare and give one quart raw linseed oil with two ounces of turpentine added.

Take Gentian 4 oz., nux vomica 2 oz., nitrate of potash, 3 oz., sulphate of iron 3 oz., funegreek, 4 oz. Mix. Give one tablespoonful in boiled grain mixed with bran night and morning for a few weeks.

2—Impossible to state positively the cause but may be due to plugging of some of the large arteries. Have your mare examined by your nearest and best veterinarian.

Fistulous Wither Difficult to Cure.

Can a fistulous wither be cured? I have a mare troubled with one since spring and have had her under the treatment of a horse doctor, but without results. There is a hole about four inches long and about the thickness of a finger.—S.N.

The only effective treatment for fistula is to open it up well and provide drainage afterwards washing out with any good disinfectant such as creolin, carbolic acid, bichloride or mercury, etc. Some recommend zinc 1 oz., water 8 ozs., syringed into the opening once daily.

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Know How Much You Make This Year

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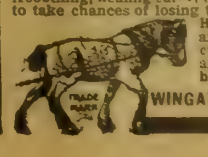

WINGATE CHEMICAL CO., Canadian Distr's, 541 Notre Dame St. W., Montreal, Can.

POULTRY

Simple Methods Will Fatten Hens.

Although American poultrymen do not lay as much emphasis on the finishing of poultry for market as do European breeders, fattening processes are gradually coming in vogue. Generally speaking, it is only the professional poultryman that makes any effort to place the fowls in top-notch market condition. This should not be so, since prepared fowls not only bring a better price, but consumers agree that they make better eating.

A thin bird is not attractive, as the skin is more or less shriveled, and the flesh tight against the bones which appear prominently. With this in mind, the comparison of cost receipts shows a decided advantage on the side of fattened poultry. For years turkeys and geese have had more attention given them during the high-priced seasons than chickens, but this should not necessarily be so, for chicken is in demand for the entire year.

The fundamental factor of successful fattening is to keep the hen quiet. This by itself may cause an accumulation of fat, but in general practice it is customary to feed a greater excess of fat in the ration than would be given to ordinary layers. The rapidity of the process would depend upon the fat-producing value of the food, and the ability of the bird to utilize the fat and keep up its vitality under close confinement.

In some sections where chickens are grown especially for market, a fattening ration is continually kept before them. The breeds raised are inclined to put on fat, and having an abundance of food at all times will take but little exercise. Thus, when full grown and ready to sell, they are as plump as the market demands. Where layers or breeding fowls are the chief source of income the pen method of isolating and fattening the birds should be practiced.

Utility vs. Fancy Poultry.

A Cape Cod poultryman who has been trying to find a market for breeding stock and eggs of a very practical strain of poultry, has become slightly discouraged over the lack of quick response. He complains that most buyers seem to think more of feathers than vigor, hardiness and eggs, and he inquires with a trace of bitterness whether anybody really cares about utility in poultry. While not many poultrymen would admit that they care more for feathers than for productive qualities in fowls, the facts seem to show that the ornamental features are considered very important. The average poultry keeper usually tries to take the middle course and to get pure-bred, prize-winning fowls that are also good in vitality and productiveness.

It is true that some strains combine both qualities to quite an extent. Still the attempt meets with the usual fate of trying to go two ways at once. It does not appear that any strain is producing both prize layers in the poultry contests and prize exhibition birds at the shows. Those who wish to obtain the very best laying qualities must give up soemthing in the appearance of the stock, and those who wish to breed for exhibition, or even for style and color, must not expect to obtain the greatest possible number of eggs or to produce market poultry at the lowest cost per pound.

In practice, however, it often works out very well to combine both lines. The small poultry keeper buys some breeding stock with a reputation behind it for prize-winning qualities, and if he is wise he also looks out for a good degree of vigor. When his young stock is grown he finds there are quite a number of high scoring birds, and he is able to sell the surplus of these at far above the price of market poultry.

It might seem that the demand would soon be satisfied, but it is not so. New flocks are continually being started, and new blood is wanted for old flocks, while the number of high scoring birds is always a very small per cent of the total hatch. The flocks bred for utility only may also meet with a pretty good demand for breeding stock. In the case of winners at egg laying contests the profits may be very large at first, but the market will be less enduring than for fancy stock. All or nearly all rthe chickens of the hatch will be available for the market, since feathers or style would not count. Hence after a year or two the supply will possibly more than equal the demand.

Pure-bred poultry is considered as a class more profitable than commercial stock, because of the possibility of selling each year a part of the output as breeding stock, and selling the eggs in the spring for hatching. Breeding stock sells all the war from $2 to $5 or $10 a fowl up to several hundred dollars for fancy show spceimens. Eggs for hatching commonly range from $1 to $5 a sitting. There is a demand for incubator eggs at $5 to $10 a 100 from good pure-bred stock. After selling all the choice breeding stock there is still the remainder of the flock to be sold as market poultry, and after the hatching season is over the eggs can be sold at the market price. Competent breeders who handle large numbers of pure-bred stock expect to realize a profit of not much over $1 a fowl.

More Stability in Commrecial Flock

A commercial flock, however, offers a greater chance of expansion of the business as the demand for the product is practically upnlimited, and less special qualities of skill and salesmanship are required as compared with the successful breeder of pure-bred stock. Commercial stock is in good demand, but not usually at high prices, althought it is to be noted that the champion laying hen at the Missouri experiment station was sold for $800. Some of the best paying strains are strictly pure bred, meat and egg production, rather than for points favored in the show. Eggs and breeding stock from some of the winning pens at poultry contests have sold for as high a price as can be obtained for average pure-bred stock.

At present high prices of grain, the annual feeding cost of medium weight breeds is usually reckoned at $1.50 to $1.75, which is the cost of about 100 pounds weight of a mixed diet. When labor is reckoned as a part of the cost it is to be placed at around 25 cents a fowl. Cost of feeding hens at the Cornell station was $1.82 each, to which should have been added a small sum for green food furnished. Various estimates at hand from private plants where all costs are included, range from $1 to $2 per layer. In these accounts it seems unusual to find any large plant averaging better than 12 dozen eggs a year for each hen. On large plants, as ordinarily conducted, an average of 3 cents an egg is all that can be obtained the year round, and even then some of the eggs were bringing high prices. To exceed this average would seem to require quite a percentage of sales fo rhatching purposes. A fair estimate of expense must include interest and depreciation on equipment, worth $3 to $5 a hen.

Small flocks with high laying records sometimes show fancy profits, as for instance, the Leghorn fowls at the Connecticut station which laid over 200 eggs apiece. They showed a profit over cost of food of well over $4 a bird. But when large flocks are considered, figures are quite different, while labor and losses become more important, and the average output is greatly reduced from those exceptional records made from small flocks. The product is placed at about 10 dozen eggs apiece for the medium weight breeds in this section, and the average price of late years has been 25 to 30 cents a dozen, depending

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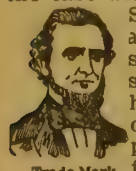
Worms in Children

Worms are a danger to the health of a child. Make sure that such is not the case with your child.



Signs of worms in children are: Deranged stomach, swollen upper lip, sour stomach, offensive breath, hard and full belly with occasional gripings and pains about the naval, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever.

If at all doubtful, make certain of health by using Dr. True's Elixir, the Family Laxative and Worm Expeller. It's the one best thing for regulating the stomach and bowels and expelling worms. At your dealer's 35c, 50c and $1.00. Advice free. Special treatment for tapeworms. Send for book.

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DOAN'S KIDNEY PILLS

Relieve The Kidneys and Bladder Like Ordinary Medicines Do The Bowels.

When the kidneys get out of order the back is sure to become affected, and dull pains, sharp pains, quick twinges all point to the fact that the kidneys need attention.

Plasters and liniments will not cure the kidneys, for they cannot get to the seat of the trouble, but Doan's Kidney Pills do, and cure the kidneys quickly and permanently.

Mrs. Lizzie Melanson, Plympton, N.S., writes: "I am sending this testimonial telling you what a wonderful cure Doan's Kidney Pills made for me. For years I had suffered so with my kidneys I could hardly do my housework. I used several kinds of pills, but none of them seemed to be doing me any good. At last I was advised to try a box of Doan's Kidney Pills. When I had taken the first box I found relief. I have used five boxes, and to-day I feel like a new woman. I cannot recommend them too highly."

Doan's Kidney Pills are 50c. per box, 3 boxes for $1.25, at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

When ordering direct specify "Doan's."

somewhat on the success of the producer in finding a good market and in obtaining eggs when the price is high. In raising pure-bred stock, extra time and special skill and attention are required, which must be deducted from the greater income received from a successful flock of pure breds.

The poultry manure is an important item which is sometimes reckoned as an offset to the labor. The product is about 100 pounds a fowl yearsly, or about a ton a flock of 20 hens. As commonly handled quite a large proportion of the product goes to waste in the yards and runs. If the manure is reckoned at 25 cents a fowl, it might pay for the care of the market flock under a good system. There is a place and a profitable one for different lines of poultry breeding for utility only. It is likely the demand is about equal among all general classes of poultry keepers, and the only way is to try various advertising mediums until customers are reached satisfactorily.—N. E. Homestead.

If Roup Affects the Poultry Flock Get Busy at Once.

A Mixture of Kerosene and Carbolic Acid Used Cautiously Usually Effects a Cure

Fall colds are generally found to some etxent in nearly all flocks of fowls unless extra precautions are taken. Colds are not roup but we might say it is roup in the first stages for if let run, that is sure what it will develop into. A bird that has once been infected with roup is ruined as far as the value of a breeder is concerned for the germs of the disease are left in the system of the fowls and they transmit it to their progeny. Therefore, breeding from fowls that have had the disease is to endanger the flock at all times.

The first step to prevent the disease is to house the stock properly. Provide for ample ventilation at all times. Fresh air is absolutely necessary in order to maintain the health of the flock. House the birds properly, set eggs from none but the healthiest stock and there is practically no danger from the outbreak of roup.

Colds first start with a running at the nostrils and can often be detected by the bird sneezing and throwing its head as if to clear the throat and nostrils. If taken at this stage they are not so hard to cure. While these are just simple colds they will, if neglected develop into very bad cases of roup. The following method is one that often brings good results and can be relied upon. Use a medicine dropper or a small machine can will answer the purpose, using about half a pint of kerosene which contains eighteen or twenty drops of carbolic acid. Place the finger just below the eye on the fowl and press down toward the opening of the nostril pressing out all the matter that will be discharged. The nostrils become clogged up and it is necessary to have this all cleaned out well before using the medicine. Now squirt a drop or two in each nostril holding the bird's head up well so it will run back into the nostril. Repeat this process until a cure is effected. Enough permanganate of potassium should be placed in the drinking water to turn it to a pink color.

Roup can be cured but after it has run long enough to develop into a bad case I never think it pays. If the head and eyes become swollen grease them with a grease made from one ounce of carbolic acid added to a pint of linseed oil or vaseline.

Roup may be cured unless in the very last stages. One must have patience as it usually takes ten to fifteen days to effect a cure and not in one or two days' time. Watch your flock closely and if you see one that is sick remove it at once. By careful watching we may be able to keep this disease down.—O. M. Allen.

Turkeys Shift for Themselves.

At persent I have no turkeys, but I used to put about 15 eggs under each hen and when the young had been out of the shell one day take the turkey and little ones to some distant part of the farm where there was timber or brush for cover and where they were not likely to be disturbed. Before putting hen with poults I dust her with some lice killer and when set to roam securely fastened a small bell to her neck. She was then left to shift for herself and her brood. I gave them no feed of any kind till fall, when they would be half grown or more. Then if they were to be sold as breeders they got light feed. It cost me something to learn that an overfed turkey, old or young, is likely to soon be an unhealthy one. Usually the hen would lose three or four poults during the summer but the saving in time and feed would balance that.

Turkeys are half wild and shy and dainty in this way of feeding. They are not scavengers like ducks and hens. Left to themselves they will be hours getting a meal and travel miles to get it; where neighbors would be troubled an acre fenced to hold them will answer. Under such conditions they should be let out only when they can be looked after. They are cleanly in their habits and need pure air.

My turkeys always roosted out of doors. I have known them to stay on the roost continually for two days and nights during a winter blizzard, but have never lost one from cold and think a helathy turkey cannot be frozen to death in any Vermont winter. I prefer Indian wheat, oats, or buckwheat for feeding in the fall. I do not like corn or any soft feed. If a man is situated so he can raise turkeys in this way I think there is a good chance for profit in it.—Milo J. Owen, Orleans County, Vt.

What to Feed for Hard Shelled Eggs.

The feeding of hens for the production of hard-shelled eggs, not easily breakable in handling, is possible and demands attention. Shells vary greatly in strength. A strong, heavy shell is not nearly so likely to be broken by the jars, jolts and rough handling incident to ordinary shipment as a weak one.

DOCTORS RECOMMEND IT

Whenever a nourishing, strength-imparting, mildly stimulative tonic is required, Doctors do not hesitate to recommend

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because they know it is a combination of the food elements of rich, ruby Douro Grapes with the tonic properties of Cinchona---supplying every element to make rich, red blood, quiet the nerves and impart strength to every part of the body.

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Chemical analysis show that the shell of the egg is largely carbonate of lime, but that it also contains carbonate of magnesia, mineral phosphates and some organic matter. If strong shells are to be produced the mineral elements must not be lacking. Grains that ar ordinarily fed do not contain these mineral elemetns in sufficient proportions, and an additional and separate supply is necessary. Fortunately these mineral elements are available in much cheaper forms than in grains. Lime is the principal ingredient of oyster shells. Iron, magnesia and often phosphorus in many kinds of artificial grit, may be procured for about the same price, while these elements in grain would cost at least double these figures.

Bone meal contains phosphorus in appreciable amounts, besides lime, magnesia, etc., and while expensive, it is effective in giving the shell an evenness and fineness of teuxture which adds much to its strength. It is, therfore, often used as an ingredient for dry mashes for laying flocks, usually in amount varying from three to five per cent.

Eggs that won't break give the poultryman greater profits than eggs that will. Make your hens lay the nonbreakable kind.

Doctor Said Sciatica--- Rheumatism---Lumbago

But He Could Not Help Me, and Endorsed the Use of Dr. Chase's Kidney-Liver Pills.

Mr. Wm. Parker, 105 Cayuga street, Brantford, Ont., tells in the following letter of his remarkable experience with Dr. Chase's Kidney-Liver Pills: "My doctor treated me for some time for Sciatica, Rheumatism, Lumbago, but to no purpose, for I had to lay off work. The visiting officer of Sick Benefit called to see me and advised the use of Dr. Chase's Kidney-Liver Pills, stating that he had been cured of the same trouble by their use. I asked the druggist about them and he recommended them highly. Not being satisfied with this, I went back to my doctor, and when he said they were good I began their use. The promptness with which they enlivened the action of the kidneys and bowels was wonderful, and it was not long before I was rid of all my trouble.

"I was so bad that I could only walk by hanging on to a chair or the wall. My wife had to lace my shoes. Only those who have had this ailmetn can realize the way I suffered. I am writing this letter to let people who have my trouble know of these pills. You are at liberty to use this letter, and if anyone interested will call or write to me I will give every detail."

Write to Mr. Parker, enclosing stamp for reply, and he will verify this statement. He will do this out of the gratitude he feels for his cure and because he realizes how difficult it is to obtain the cure of these dreadfully painful ailments.

There are so many treatments recommended for rheumatism that you naturally doubt them all. Here is an opportunity for you to verify the cure and put this great medicine to the test. It will only cost you a quarter to try Dr. Chase's Kidney-Liver Pills. They get at the very foundation of rheumatism, and by removing the poisons from the system take away the cause of pains and aches.

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25 cents a box, all dealers, or Edmanson, Bates & Co., Limited, Toronto.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

The Messenger Maid

(Continued from Last Issue)

"I never forget," said the child gravely, and as he stooped over her he took her hands, and kissed one and then the other. Shy Isabel suddenly put her fresh lips to his cheek then, darting away, buried her face in the coverlet of the great bed.

Whack! a heavy riding-whip descended sharply with a resounding crack on the stout oaken door.

With a little startled cry, "He's come!" Isabel lifted her head and then started round. The old lady lay back smiling grimly on her pillows. The gilded stag on the wall pranced on its headlong career as before. There was no dark, narrow door, no wonderful young gallant with gay eyes and witching smile. There was only Major Walsh standing flushed and florid in the doorway, with something between a scowl and a smile on his face. Had it all been a dream then?

* * * * * * *

The cathedral bells were scattering their shower of fairy music over the crowding roofs of the oldcity of Antwerp, as on the day in May a stranger strolled across the Place Verte under the flickering spring foliage of the lime trees. He was a man in the middle thirties, and his fine worn face and the commanding grace of his tall figure drew many a glance after the beau cavalier, as the whispered comments called him. As his aimless walk brought him opposite the cathedral he paused a moment, then saying to himself, "Well, I have cause enough to give thanks," he joined the thin trickle of worshippers entering the great south door.

But he was no Catholic, and the service already going on did not hold him long. Presently he wandered down the vast nave till the lights on the altar seemed but a dim twinkle in the distance; then turning into a little memorial cahpel, he seated himself behind the great pillar at the entrance. He would fain be alone with his thoughts, and he had cause enough, as he had said, for thought and for thanksgiving too.

Time, the healer, had for ten long years been doing his work. Culloden was but a bitter memory. King George sat secure upon his throne, and by degrees the proscribed Jacobites were being allowed to return to their own country. Among those to whom this boon had been extended was Nigel Maitland, while, thanks to powerful friends, house and lands were to be restored to him. But it would be an empty house, to which he would return and a changed countryside. There was no one of his name to welcome him to Ledington. Calderside was in the hands of strangers. Then his thoughts wandered back across the gulf of the years to that memorable day, when on a child's warning he had escaped with bare life from Ledington.

Where was she now, that child who would be a child no longer? Her father he knew had been exiled soon after his own escape, then some years later, when he was far away in Spain, fighting the battles of France, since he might no fight for his own king, he had heard of Sir Hugh Calder's death. The war over at last, he had sought to find the widow and the orphan child to hom he owed so much, but he could find no trace of them. The full, crowded years of a soldier's life had rolled on like an effacing tide over these tender memories, yet he had never wholly forgotten a child's pure face, a child's innocent kiss, which had indeed more than once been like a protecting talisman carrying him scathless through many a wild scene of revelry.

Now on the eve of his return to the old surroundings (he was only waiting for the next packet to Leith) how clearly that last memory came back to him out of the mists of the past, even to the quaint sampler spread on the big bed in the great gilded bedchamber. But clearest of all was the little trembling figure, and the young steadfast face framed in a scarlet hood. "She must be a sweet maid now, wherever she be," he mused, recalling the dark, wistful eyes. "I never forget," she had said. Ah, if such a fair, gracious presence had been awaiting him at Ledington or returning to the old house by his side, what a different home-coming it would be.

Sudednly voices from behind the pillar struck through his thoughts.

"Can I not be alone, even here?" said a girl's voice.

"Pshaw! we are disturbing no one. We must come to an understanding—as well here as anywhere else," said a man's deep, hoarse voice.

"An understanding? I have never given you the least cause to misunderstand me," came the retort, swift and sharp.

"You know it is your mothers' dearest wish," went on the man as though he had not heard. "Does that not weigh with you now?" significantly.

"Ah, my poor mother!" bitterly.

"And she thinks she has good reason to urge it," said the other with the same heavy significance.

"You remind me of that" flashed out the girl. "For my mother's sake I would give you gratitude—oh, so fully, so gladly, but to strike a bargain—to buy me with your bounty and then to talk to me of love! Love!" with fierce scorn. "If you had a spark of common generosity—"

"Gratitude—generosity—pshaw! We needn't bandy words. All's fair in love and war,' 'said the man with a laugh. "You know I love you."

"God keep me from such love, then!" broke in the girl's voice, the intensity of her emotion only heightened by her low, guarded tone. "I was a child—I did not understand, but I see it all now. You have separated us from all our friends. You took a cruel advantage of my poor mother's misery to make us dependent on you—you! Oh, if I had known it, the bread I ate would have choked me long ago, but now that I do know—"

"Yes, now that you know, what then?"

"I will find means to support my mother myself, though I starve for it," proudly.

"Maybe, but you won't want to starve her, and starve yourself at the last," brutally. "No, this is sheer waste of words. Your mother wishes it, as if with her last breath. I want you. Want you! I've waited for you for years, for more than half your life. Am I to let the flower I've watched so long be plucked by another hand?" The man's voice deepened to a note of strained, hoarse passion. "Do you think you can escape me,—you, a girl alone, friendless, penniless among strangers? You're mine—mine—"

Behind the pillar Maitland stood irresolute. At first he had heard the voices as if they were part of the half dream into which he had sunk, then he made the unwilling listener's usual mistake of delaying too long to make his presence known. But at those last words, at the change in the man's voice, at the girl's faint gasping cry, his hesitation was at an end. He must stop this, come what might.

With as casual an air as he could, he strolled round the pillar. For an instant both speakers stared at him in blank surprise, then seizing the moment, the girl wrenched herself from the grasp the man had laid upon her arm, and sped away down the long aisle, not so swiftly though, but that Maitland caught a glimpse of the pale, pure oval of her face, and of great dark eyes dilated with wrath and dread. With one careless, contemptuous glance at her companion, a stount, elderly, gross-looking man, he followed down the nave. Where had he seen that face before? It seemed curiously familiar, it recalled some insistent memory—but what?

As he stepped out into the sunshine of the square, his foot struck against something soft. He stooped and lifted a little packet, which unrolled itself in his hand. Then he stood staring. Of all things in the world it was a sampler! A sampler? It was the very one he had been dreaming of! There was the quaint, steep-roofed house, the stiff trees, the doggerel lines, "Isabel Calder is my name." Little Isabel—no wonder her face had touched a vibrant chord. He had found her, then, and found her helpless, bullied by that old hound! A wave of unspeakable emotion surged up within him.

"Your pardon, sir," said a voice behind, quivering with rage, but curbed to half incoherent courtesy. "That belongs to a lady—a friend of mine."

Maitland faced round upon the speaker, and with the clue now supplied, recognition dawned again.

"The lady, I find, is an old friend of mine, too, Major Walsh. I shall restore her property to her myself. She is no longer 'alone, friendless, penniless among strangers.' I am Nigel Maitland, whose acquaintance you were once very desirous to make. If you are still of the same mind I am very much at your service," his hand instinctively grasping his sword-hilt, while he gazed steadily into the bloodshot eyes.

Walsh's eyes fell. He backed into the crowd. Perhaps he felt that his game was played out. Anyhow he knew himself to be no match now for the tall, athletic figure before him. Maitland turned away with a laugh. He had lost sight of Isabel, but no matter! He would soon find her now. Then his heart leaped, for there she was, coming towards him, her eyes on the ground, evidently seeking for the lost sampler. With one stride he was at her side.

"May I remind Miss Isabel Calder of an old friend and an old debtor, whom I hope she hasn't quite forgotten."

The girl started round. The pallor of her face was drowned in a sweet, sudden flush, the trouble in her eyes gave place to joyful wonder.

"You!" she uttered under her breath, as if the word had escaped without her knowledge. Then her face changed pitifully. "It was you, then, behnd the pillar? You heard?" she gasped.

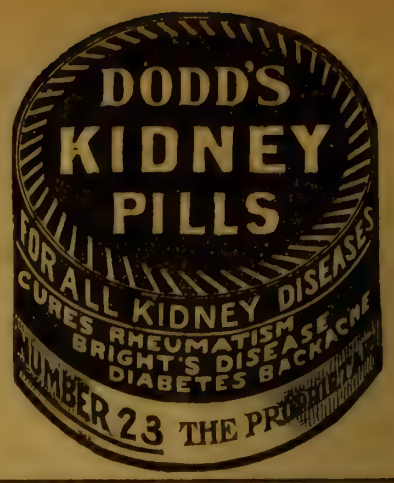
"Yes, I heard, and thank God I did. I know now why I sought my little friend in vain," said Maitland in a shaken voice.

That sweet flush, the glad unconscious welcome of her eyes had opened the flood-gates within. The tender twilight memories of his child-delivered, which had been hovering in his mind, now flamed at the sight of this fair and gracious girl into the glowing dawn of new-born passion, and all his being rose up to greet her. He knew his own heart now.

"Here, by God's rood, is the one maid for me," he, too might have said if he could have put the tumult of his feelings into words.

"You havent' forgotten the gilded room and the door behind the stag, have you, Isabel " he went on, his voice thrilling. "I said then that some dayI might be able to deliver you from Walsh. I little thought it could ever come true. The scoundrel won't trouble you again, but that's not enough. I'm a free man now; I'm going back to old Scotland—back to Ledington. Come with me, Isabel, come and make a home of an empty house. Your mother was a dear and good friend long ago. I think she won't grudge me now what would be dearer to me than life. She will come with us. Her own land, her own air will give her new life. Why should you linger here among strangers, when a home and a heart are waiting for you? Will you take then, Isabel? Will you come with me—will you?"

With his hands clasping here, his eyes holding hers, the girl was swept



BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

CONSTIPATION

Is Productive Of More Ill Health Than Anything Else.

If the truth was only known you would find that over one half of the ills of life are caused by allowing the bowels to get into a constipated condition, and the sole cause of constipation is an inactive liver, and unless the liver is kept active you may rest assured that headaches, jaundice, heartburn, piles, floating specks before the eyes, a feeling as if you were going to faint, or catarrh of the stomach will follow the wrong action of this, one of the most important organs of the body.

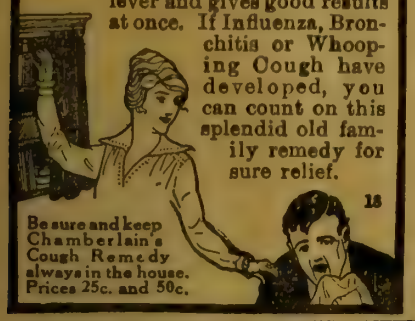
Keep the liver active and working properly by the use of Milburn's Laxa-Liver Pills.

Miss Rose Babineau, Amherst, N.S., writes: "Having been troubled for years with constipation, and trying various so-called remedies, which did me no good whatever, I was persuaded to try Milburn's Laxa-Liver Pills. I have found them most beneficial, for they are indeed a splendid pill. I can heartily recommend them to all who suffer from constipation."

Milburn's Laxa-Liver Pills are 25c a vial, 5 vials for $1.00, at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

CHAMBERLAIN'S COUGH REMEDY

You can ward off many anxious moments if, at the first sign of a Cough or Cold, you will use Chamberlain's Cough Remedy. It loosens the phlegm, it heals the sore throat and bronchial tissues, allays fever and gives good results at once. If Influenza, Bronchitis or Whooping Cough have developed, you can count on this splendid old family remedy for sure relief.



Be sure and keep Chamberlain's Cough Remedy always in the house. Prices 25c. and 50c.

18

away on the glowing flood of his passion. If it was a hasty wooing there was no doubt of its utter sincerity, and after the long horror of her struggle with Walsh it was little wonder if Isabel yielded to it, and hailed her deliverer who had stepped into her life as suddenliy, as amazingly as the gay young gallant had appeared from behind the golden stag. The vague dreams she had half-consciously woven around him since that unforgotten moment had become bewilderinly true; when hope had been at the lowest ebb her Prince Charming had come to the rescue. A new world opened to her, as under the silken leaves of the young lime trees they wandered on, Nigel urging, persuading, pleading. Time seemed to stand still, the sunset was painting the western sky, when at last Isabel said shyly.

"I knew you, of course. It was little wonder I did, but how did you know me? I was only a child then."

Nigel laughed happily. "I wish I could say, too, that I had known you at once. I should very soon have known you, for the sight of your face knocked at my heart. but I couldn't doubt when I found this,' and he drew out the sampler. "What hapy chance made you carry it with you today? My dear love, what is it " as Isabel's look changed startlingly at the silght of the sampler, at the contrast between the miserable then, when she had snatched it up in an agony of despair, and tnis blissful now.

'It was no happy chance, but a very forlorn hope,' 'she said in a low voice. "The housewives set great store by needlework here. I thought if I took it to a shop I know—if it were seen—someone might employ me—I might earn my mother's bread and my own; his was poisoning me," she shuddered.

Nigel drew a long breath. "Thank God that's over," he said, as he gently drew her nearer to him.

With a melodious crash the bells from the soaring spire high above broke the blissful stillness which had fallen between them.

"Listen to the bells!" cried Nigel gaily, with a jerk of his shoulders as if he were 'casting dark days and dark memories behind him. 'Please God, we'll soon be hearing the old bell of Ledington kirk, and though it's cracked enough, it'll make better music than Antwerp chimes, for it'll be ringing in our wedding day and our welcome home."—The Girl's Realm.

Drowning Accidents.

How They May Be Prevented—Rules for Resuscitation—Treatment for Electric Shock

Every summer, a large number of lives are lost by drowning in the various bodies of water in Canada and particularly at summer resorts. Occasionally these are unavoidable accidents but most of them are due to carelessness and are preventable.

The first safeguard against drowning accidents is to know how to swim and it should be an esential part of every child's education. In England much more attention is paid to the instruction of school children in this useful and healthful form of exercise.

Children, after learning to swim, are liable to become too venturesome and should be cautioned not to take risks, as there is always the danger of cramps or heart failure due to the extra tax put upon the heart through exposure to cold water or through overexertion.

In rescuing the victim of a drowning accident great care must be taken by the swimmer. Do not close in rashly, but act warily and bear in mind that the only safe and ready way to subdue a frantic man in the water is to secure a hold from behind him. A simple and effective way is to lunge unexpectedly for his wrist, and, wtih a sudden, outward movement, spin him about, throwing your free arm around his neck. Once you have him thus you can, if he is submissive, grasp him by the hair or the neck of his suit and with a quick pull towards you, start him floating face upward, when you throw yourself gently backwards, and proceed to tow him in this position, or by swimming with your unhindered arm and the legs. As a last resort, a stunning blow on the head is effective.

The work of resuscitation includes the following:—

First—Freeing the stomach and air passages from water and mucus.

Second—Forcing the foul gases from the lungs.

Third—Replacing the foul gases with pure air.

Fourth—Inducing circulation.

Fifth—Restoring natural respiration. This of course is the final and essential aim.

1. Lay patient down carefully prone with face downward. Open mouth wide, and if foul with mucus or foreign matter, clean with hand or cloth. Stand across body, facing the head, pass your arms around the waist until your hands meet over the left side, interlocking the fingers in order to grasp the stomach between your palms. Force out the water by raising the body from the middle, at the same time pressing the hands together. Knead inward and upward under the ribs from the left side towards the centre. Press for four seconds, then relax, endeavoring to grasp more of the stomach pouch, until water ceases flowing from the mouth.

2. Place a pilow-like suport beneath the victim at the stomach. Turn his head to windward and crook his arm on the side opposite the face and rest the head in the bend of his arm.

3. Kneel over the patient facing the head with one leg on each side of the body. Rest your open hands on his back, thumbs near the spine, at the height of victim's elbow, with fingers spread over the lower ribs. Throw yourself forward with weight on your arm, and with steady, increasing pressure force the foul air from the lungs. After four seconds straighten up quickly releasing the ribs, so that they will spring back into place. Bend over again immediately to press for four seconds more, than streaighten. Continue this treatment until signs of life begin to apear. Make from twelve to fifteen respiration acts to the minute. Do not become discouraged if your efforts at resuscitation do not at first meet with success, as often a patient will respond after all hope seems lost.

Authentic cases are on record of victims having been restored to life after being under water for as much as half an hour, and it has at times taken as long as four hours to induce natural respiration in the apparently drowned.

4. As soon as natural breathing sets in strip the patient of all wet clothing, cover the upper body with something warm and dry and start rubbing the limbs with rapid strokes, first from the centre joints towards the heart and gradually working down in this manner to the extremities.

5. After massaging the patient put him to bed and if natural heat does not return promptly, distribute covered hot bricks or water bottles at the soles of the fet, over the stomach and under the armpits.

6. If necessary, give patient whisky, brandy or other stimulants, diluted in hot water. Administer in teaspoon or tablespoon does, every ten or fifteen minutes for the first hour, and as often as seems expedient thereafter.

Treatment of Electric Shock

Electric shocks suspend the action of the heart and breathing should be restored by artificial means.

Although the shock may appear to have been fatal, life may often be retored if action is taken without delay, and continued vigorously and patiently.

The steps to take are:

Remove the body from contact with the wire, cable, or other conductor by

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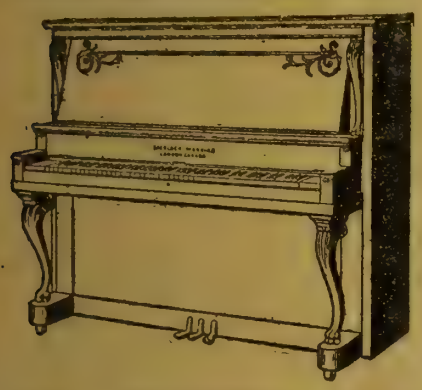

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I. C. R. TAKES OVER LINE TO MUSQUODOBOIT

The Service in the Meantime Will Be on Tuesday, Thursday and Saturday, Leaving Dartmouth at 3 p.m.

Halifax, Dec. 31.—The operation of the Dartmouth to Deans branch of the government railway system will be undertaken on Monday, January 3rd. The trains will run from Upper Musquodoboit, leaving at 5:30 in the morning and arriving at Dartmouth at 10 o'clock in the forenoon, thus making the run of 70 miles in four hours. Returning the train will leave Dartmouth at 3 o'clock in the afternoon arriving at Upper Musquodoboit at 7:30 o'clock in the evening. The trains will run on three days each week—Tuesdays, Thursdays and Saturdays. It will be a mixed service-passenger and freight. Cavicchi and Pagano, the contractors who built the road, have been running the service for some months and have thereby been a great convenience to the people travelling from Halifax to Middle Musquodoboit. Now it is to be undertaken by the I. C. R. as a branch of the system that extends from Halifax to Winnipeg. The desire of the people on the shore and through the Musquodoboit valley is at last to be gratified with the operation of the road as a part of the I. C. R., and in this respect the beginning of 1916 will be memorable. It will be noted that the road in the meantime will be operated not to Deans, but to Upper Musquodoboit.

PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

breaking or disconnecting the circuit; dragging the patient away by his coat-tails, the hands being protected by rubber gloves or any dry wollen material, such as a cap, folded several times or with a stick or any non-conducting material.

If posisble, without discontinuing the treatment, send for a doctor.

After removal do not wait to undo the clothing, but proceed to restore breathing by the same method as described above for drowning accidents.—W. J. D.

Letting one's Self Alone.

An article in a recent number of the Mother's Magazine apepaled to me and I believe it will to others. It is as follows:

"One of the important things to know in life, especially if you are a woman is how to let yourself alone. The ability to relax, the art of being judiciously lazy, the tact to let herself alone, has saved many a woman from a nervous breakdown. We all know the housewife who nags herself into such a state of consciousness that she cannot rest. If she lies down, she is continually worrying herself with thoughts of the work she is neglecting.

"Much of the blame for this state of affairs lies at the doors of the mothers. The mistake is in their training of their children, especially their daughters. They are taught from earliest infancy to be kind to others, to bear with them, to forgive them, to help them; but from birth to death, no one ever tells them to be kind also to themselves.

"The woman who nags herself can make herself more miserable than any one else possibly could. She can make her life more of a nightmare than any misfortune could possibly make it. If such women could learn to be kinder to themselves, there is no doubt that their own lives would be lengthened; and not only that, but the lives of those with whom they come in close contact would be made far more pleasant."—B. F. Coen, Colorado Agricultural College, Fort Collins, Colorado.

More Use of Cereal Foods.

Oatcakes.—There are various ways of making oatcakes, according as they are desired thick or thin, rich or "water." For an ordinary (not too thick) oatcake, put two or three handfuls of oatmeal into a bowl, add pinches of salt and baking soda, and then stir in one dessertspoonful of melted dripping or lard, and moisten with just enough boiling water to form a firm dough. Knead the cake very firmly, strewing the baking board well with meal. Roll out quickly to about a quarter of an inch in thickness, cut and fire one side of the cake on a hot gridle, and toast the upper side before the fire. Failing a gridle, the oatcakes can be baked in the open; they should take about fifteen minutes in a fairly quick oven.

Wheatmeal.—In its natural state wheat contains every element of nutrition necessary for the support of the human body, and in gluten it is very rich, containing 12 per cent. of that valuable matter. The virtue of eggs, milk and beef may, indeed, be said to be combined in wheat, not the wheaten flour from which our white bread is made. By the time that wheat has gone through all the various and ingenious processes which are necessary to bring it to the required degree of refinement, its character as the "king of grains" is gone. It is not in its whiteness that the value of a loaf consists; brown bread is far more healthful and forms a more perfect food than does white bread. Although it would not be wise to adopt brown bread as the only form of loaf, even in war time, the establishment of its use should be retained in every household.

SERVICE

THE THIRD BRANCH OF BUSINESS

There was a time when business consisted of but two branches—buying and selling. They were fundamentals, of course, but they were the only fundamentals recognized. We have added a third great branch. We call it SERVICE. It goes into every transaction we have, and stands back of every vehicle we make or sell. It's your guarantee of QUALITY, PROMPTNESS AND SQUARE DEALING.

You will receive the benefits of this service when you buy from a dealer in Nova Scotia Carriages.

If there is no dealer near where you live, and you are in need of anything which we manufacture, we would appreciate a letter from you and would be glad of the opportunity to serve you by arranging for our nearest dealer to call upon you.

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AMHERST, N.S.

Wheatmeal Bread.—Sieve ½ lb. or ordinary flour into a bowl, then add ¾ lb. of wheaten meal (unsieved). Now add one teaspoonful of caster sugar, half a teaspoonful of salt, one small teaspoonful of bicarbonate of soda, and one small teaspoonful of cream of tartar. Rub in 1 oz. of salt butter or lard, and one teaspoonful of syrup, and then stir in sufficient sweet milk to form a good dough. Turn on to a floured board, form into shape, and place in an oiled or buttered cake or loaf tin. Set before the fire to rise for a quarter of an hour, place in a moderate oven and bake for one hour.

Wheatmeal Scones.—These can be made from the same recipe as the loaf, but make the dough of a slightly firmer consistence. Turn the dough out on the floured board, knead it slightly, roll out, cut into shapes according to taste, place on a floured baking-tray, and bake in a quick oven for ten or twenty minutes. Cool the scones on a wire tray.

Wheatmeal Porridge.—If any difficulty is experienced in the digestion of oatmeal porridge, wheatmeal porridge will prove a most excellent substitute. This finds a place already in many homes, alternating once or twice a week with oatmeal. The economy of these foods in this time of national stress cannot be too highly estimated, but their value is probably even greater as an asset to the health of the people. Bring sufficient water to a boil in a pan for the required amount of porridge. Let the amount of meal be in proportion of 8 oz. to the pint of water in the pan. Moisten the meal in a small basin with cold water, making it smooth with a wooden spoon. Stir the moistened meal into the pan, stir briskly until the porridge boils and lift the pan to a part of the stove where it will boil gently, put on the lid, and cook steadily for forty minutes or one hour. Add salt to taste, boil up briskly and stir well before dishing. Serve very hot with good sweet milk or cream.

Barley Meal.—Barley meal has virtues of its own quite apart from oats or wheat, and its digestive qualities exceed them. At the time of the South African War it may be remembered that during a famous siege, when food was running very short within the town, a soldier from the highlands of Scotland helped to save the life of the garrison by teaching the men to make "sowens," a kind of thick porridge jelly. What is known in England as "flummery" is practically the same as "sowens"; the Scotch variety is made from the husks of oats, or preferably barley, which are put to steep in tepid water, and then allowed to lie for two or three days. The liquid is then poured off the husks and boiled in a pan for about ten minutes; served with syrup it is quite delicious.

Barley Soup.—Pearl barley is the first form in which the grain can be obtained. This recipe for soup is very excellent. Required: Take 2 lbs. boiling beef or 3 lbs. neck of mutton; one small turnip, cut in dice; one carrot, cut in julienne shreds; one onion, skinned, scalded and sliced; two leeks, carefully washed and sliced; 4 oz. of pearl barley, salt and pepper, and cold water, parsley and celery in season. Method: Wash the barley thoroughly, and put in a pot with four quarts of cold water. Bring it to the boil and

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Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

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The Misfortune of a Wrong Start.

Hundreds of boys and girls leave the Grammar and High schools each year to accept minor positions in the business world. They are forced to undergo the humilating experience of having graduates of good business schools placed in positions ahead of them. Promotion is comparatively slow for the untrained. These young people regard the business world as an unsympathetic place. If their ambition is not killed entirely, they start again right, by taking a business course.

It will pay you to attend the Moncton Business College.

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add the vegetables, which have been already brought to the boil in a small pan of cold water and that water strained away. Wipe the meat and add it after the vegetables. Season with salt and pepper, and simmer slowly for three or four hours. Just before serving add one dessertspoonful of chopped parsley. Dish the soup in a hot tureen. Serve the meat with white sauce, or dress it, and serve in any way, according to taste

Barley Scones.—Take 1 lb. of barley meal, put it in a basin with one teaspoonful of salt, one small teaspoonful of caster sugar, and one teaspoonful of bicarbonate of soda. Mix all well together, then stir in with a wooden spoon sufficient buttermilk to form a stiff dough. Roll out on the baking-board, cut into neatly shaped scones, and fire on a good hot gridle, turning the scones very carefully when the underside is cooked. Sir Walter Scott, in the "Fair Maid of Perth," referred to such scones as these when he said "barley scones to whiten your teeth."

Highland Barley Scones.—This is a very old recipe, but no more delicious novelty can be placed upon a breakfast table today. They must be freshly made from really good barley meal. Put 1 lb. of barley meal in a basin with one teaspoonful of salt, and mix these together. Stir in quickly sufficient boiling water to make a stiff dough. Knead very quickly and form into an oblong roll. Cut off a small piece, roll in a little meal on the baking-board, and flatten out to a very thin scone. Place on a hot gridle, and proceed to form the rest of the dough into scones in the same way. The scones must be fired on both sides as quickly as possible. Failing a gridle, an oven shelf makes a good substitute and may be used equally well over a closed range or a gas cooker.—Muriel Sutherland, in "The Queen."

Officers of the M. S. B. A.

For the first time in its history the Maritime Stock Breeders' Association were able to report the financial balance on the right side of the ledger. This organization manages the Winter Fair and Horse Show annually held in Amherst, and their ambition to separate themselves from an annual deficit has at last been reached. The association regretted being temporarily forced to lose the assistance of Colonel H. Montgomery Campbell, who is now in command for the 64th Battalion, and has been president of the association for some years. The new officers elected at the annual meeting held at Truro, N.S., on the 5th inst., are:

President—A. E. Trites, Salisbury, N. B.

Vice-president for New Brunswick—W. W. Hubbard, Fredericton.

Directors for New Brunswick—R. A. Snowball, Chatham; W. S. Harding, Hammond River, and A. Avard, Sackville.

Vice-president for Prince Edward Island—Hon. M. McKinnon.

Directors for Prince Edward Island—James F. Roper, Charlottetown; J. M. Laird, Kelvin Grove, and Walter M. Lea, Victoria.

Vice-president for Nova Scotia—S. A. Logan, Amherst.

Directors for Nova Scotia—W. W. Black, Amherst, John O'Brien, Windsor Forks, and W. L. McFarlane, Fox Harbor.

Secretary and manager—F. L. Fuller, Truro.

It was decided to hold the Horse Show and Winter Fair this year at Amherst as usual, providing the building was available.

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Liberal Assortment
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Maritime Holsteins in R. of M. and R. of P.

In the list of Holstein-Friesians making semi-official records from October 1st to November 30th, 1915, Artis Rosie, 9808, a five-year-old cow owned by the Nova Scotia Agricultural College, Truro, N.S., leads the mature class with 751.25 lbs., butter from 16318 lbs. milk. A three-year-old cow in the same test made 898.75 lbs. butter and takes second place for Canada in her class. The cow in question is Lilith Pauline Calamity Jane 3rd, owned by J. M. Steves, Steveston, B. C.

In the official records of the same period we find in the three-year-old class the name of Fay De Kol 2nd, 21265, owned by A. E. Dickie, Central Onslow, N.S., with a record of 412.2 lbs. milk yielding 16.10 lbs. butter in seven days.

One of Samuel Dickie's four-year-old cows, Cobequid Helbon Princess qualified in the record of merit with 514.9 lbs. milk yielding 21.64 lbs. butter in seven days.

Vegetable Seed Situation.

The following extract of an article from a newspaper of Gothenburg, Sweden, will be of interest to growers of vegetable seeds. The article refers to the Board of Directors of the Agricultural College of Alnarp, Sweden, asking for a government grant for the encouragement of vegetable seed growing.

"The board points out that the war has most clearly emphasized the importance, for the country, of home production of vegetable seed. Owing to the most important vegetable seed producing countries having prohibited the export of such seed, the prices of a great number of important vegetable seeds have risen enormously. And, still worse, some seeds can hardly be obtained at any price. It is reported, from a well informed source, that vegetable seed growing in the countries engaged in the war has been largely neglected during the past summer and that for this reason further advances in prices can be expected. Reports from Germany state that the supply of seed of spinach, carrots, most kinds of cabbages, onions, cucumbers and peas is utterly small. Furthermore, Germany has prohibited the export of vegetable seeds to the end of the war. There is therefore every reason to fear that we have to face the possibility of a very serious shortage of certain vegetable seeds."

The Farmers' Advocate says: "We never like to see a judge discussing classes with anyone privileged to be in the ring, before the awards have been made. It leads people to ask, "Who is the judge?" To this the Maritime Farmer says, "Amen!"

There was no cause to complain about this matter at the recent Maritime Winter Fair. Each and every judge attended strictly to business and did not converse with any persons in the ring or out of the ring until after the awards were placed.

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The Maritime Farmer
SUSSEX, N. B.

Starting a Farm School.

(By W. A. Craick, in Farmers' Magazine, Nov., 1915.)

A good many years ago, a young man came to the little town of Woodstock, N.B., from the provincial capital at Fredericton, and hung out a sign over a door in the main street. It read, "L. P. Fisher, Barrister, etc." Ten year ago this same individual, grown old and feeble, passed away and was buried in the town cemetery. When his will came to be opened and read, it was found that, after making several small bequests, all his property was to be administered for the educational and social advantage of the community in which he had spent his professional life.

Today a visitor to the beautiful town on the St. John River will have pointed out to him four buildings. On the northern border of the town, he will be shown a big, white residence of rather ornamental aspect, looking down from a height on the river. This, he will be told, was the imposing mansion which the late Mr. Fisher built for himself and which he gave on his death to be converted into a hospital —the L. P. Fisher Memorial Hospital. Somewhat nearer to the centre of the town, rises a large brick structure of considerable size and effective appearance, over the front of which stands inscribed the words—The L. P. Fisher Memorial School. Inside, if you hap pen to have the curiousity to enter, you will find an interior so splendidly furnished that you will rack your brain for a long time to recall the existence of a finer public school building in any town of like size.

On a prominent corner of the main street, there will be pointed out to you with pride, the L. P. Fisher Memorial Library, a building that would shame a more pretentious Carnegie institute elsewhere. At last, but by no means least, you will be shown a plainer building than the others, placed some distance along one of the residential streets, and inscribed, the L. P. Fisher Vocational School. It is in the latter, if you happen to be an agriculturist, that your greatest interest will doubtless centre.

Eccentric or Idealist?

The late Mr. Fisher was evidently an eccentric sort of a person, but just what his characteristics were I have not been able to gather. Some would have it that he was a bit of a miser, others that he was inspired with lofty ideals for the good of humanity, which would be worked out after his death. Be that as it may, he at least did one thing and that was to accumulate considerable wealth. Indeed, his estate seems to have panned out far better than he himself ever expected that it would and already a good many thousand dollars have been expended by the trustees in the erection and equipment of the institutions mentioned.

By an arrangement between the Fisher Estate and the provincial government of New Brunswick, the Woodstock Vocational School was built and adapted for use as an agricultural school. It is the first of three such schools, which are to be operated in the province. The second at Sussex has just been completed this summer. The third has not yet been started but it will be located eventually at some point in the north-eastern section. The three together will provide opportunities for the sons and daughters of farmers living in their respective vicinities to secure special training in agriculture and domestic science.

For the time being and until such time as the work of the agricultural school demands more accommodation, the main floor of the Vocational School is under the jurisdiction of the Woodstock School Board, while the upper floor and the basement are reserved for the agricultural courses. On the main floor the children attending the local public schools are taught manual training and domestic science. The equipment for this purpose is excellent, and the work being compulsory, every boy and girl in town gets a certain amount of instruction in these useful arts.

The work of the agricultural school is quite distinct from the public school work. Indeed, eventually it is expected that another vocational school will be erected for the exclusive use of the town children, while the present vocational school will be given over entirely to the Departmetn of Agriculture.

"So far we have not got past the short course period," explained Mr. Newton, Principal of the Agricultural School, when I asked him to outline New Brunswick's scheme of agricultural education. "We held a short course here in March, 1914, and a second short course this spring. The Minister of Agriculture, Mr. Murray, hopes to make a trip soon to inspect agricultural schools elsewhere. Mr. Steeves, the director of elementary agricultural education, myself and others will probably accompany him. After that we will be in a position to devise plans for establishing regular courses in the schools.

"Last summer we began a summer science course for rural school teachers, lasting eight weeks. The attendandce reached 86 which we consider very gratifying for a start. This year in addition to the 86, who will come back for the second course, we expect to have nearly 200 more. The work this time will be divided between Woodstock and Sussex, as the Sussex school is now ready for occupation.

"Our short course work has got very nicely started. This year we held six-week courses at Woodstock, Sussex and Newcastle, all of which were well attended. To interest the girls, we also arranged two-week courses in household science, which were held at Woodstock, Chatham and Sussex.

Experimental Union Organized

"In connection with the schools, we have organized an experimental union similar to the one at Guelph. Last year some interesting results were obtained. Our efforts have been directed specially to investigation work with the root crops, but we have also studied alfalfa, corn and red clover. So far as alfalfa is concerned, we have not yet met with much success, though we have had some striking instances of favorable results and are hoping for general progress."

The Woodstock School seems to be well adapted to the purpose for which it was intended. It is well-built, well-lighted and comomdious. In the basement, which is floored with cement, there is a large room, into which cattle can be brought for demonstration lectures. It is surrounded by a raised wooden platform on which seats are

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placed. The same room can also be utilized as an assembly room, the open space being filled with collapsible chairs. On the opposite side of the basement there is a large utility room, where blacksmith work will probably be handled. During the short courses it came in handy for practical work in tree planting, pruning and similar work.

On the upper floor there are the offices of the principal and the instructors, lecture rooms and laboratories. These have not yet been fully equipped, but it is expected that they will soon be ready for the regular work of the school.

These New Brunswick schools are in the main like the Alberta schools and will fulfil about the same functions. They will serve certain sections of the province, giving opportunities to the young men and women to secure instruction without the necessity of undergoing heavy expense. Even in the vicinity of Woodstock itself there must be hundreds of young people who stand t benefit materially by the establishment of the school, for the town is right in the middle of a splendid agricultural district.

Hitherto agricultural education has been a minus quantity in New Brunswick. It is quite true that the province would pay the fare of a student to and from an agricultural college elsewhere, but that concession only benefitted a very few. Now, with schools at their very doors, there will be no excuse for further delay and one may hope as a result to see a very decided improvement in farming methods in the province.

Use Formalin to Destroy the Spores of Smut in Oats.

Smut is a fungus disease caused by minute colorless plants called fungi which have lost the power of manufacturing their own food and have become thieves and parasites stealing what they require from other plants and in so doing injuring them in various ways. The bodies of fungi which cause smut consist of fine, delicate threads or cubes which are so exceedingly small that they can only be seen with the aid of a microscope. These live between the cells of the grain plants and obtain their nourishment from them. Some of these fungus threads become changed and produce reprodutcive structures termed spores, which serve the same purpose as the seeds of flowering plants, namely dispersal and reproduction.

Oat smut can be prevented by treating the seed wtih formalin, either by dipping or sprinkling the solution. If the dipping method is preferred mix one half pint of formalin (40 per cent formaldehyde) in 21 gallons of water. Place the seed to be treated in a coarse sack; a bran sack is excellent for this purpose. Fill the sack about three parts full and immerse in a formalin solution about twenty minutes. During the treatment raise the sack up and down two or three times in the solution to insure wetting every grain that it contains. After treating, spread out the grain thinly on a clean floor where it can be stirred and allowed to dry sufficiently to be sown. Of course it is well to remember that this work should only be undertaken just previous to the grain being sown. The sooner it is sown after treatment the better. Twenty gallons of solution will treat about twenty bushels of the grain. Sereral treatments may be given with the same solution, but each lot will be required to be immersed for twenty minutes.

If the sprinkling method is adopted, mix one pint of formalin with forty gallons of water. Place the grain to be treated in a heap on a clean floor and sprinkle the formalin solution over the grain. Then shovel the grain over to another pile so as to mix it thoroughly, then sprinkle and shovel again. Repeat this until every grain is moistened by the solution, then cover the pile with sacks and leave for three or four hours. At the end of this time spread the grain out thinly to dry. Shovelling it over thre or four times will hasten the drying process. Forty gallons of the formalin solution is sufficient to sprinkle between thirty and forty bushels of grain.

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The Ambrose Ayrshire Sale.

Following are the prices realized at the dispersion sale of pure bred Ayrshires, held by H. F. Ambrose(Stewiacke, N.S., on November 30th:

Daisy V., (21944) cow, $98.00; heifer calf, $47.00, Geo. Walker, Truro, N.S. Pink of Springvale (14317) cow, $77.00, John McLeave, Stewiacke, N.S. Floss (37145) cow, $124.00, T. J. Hawkins, Stewiacke, N. S. White Daisy of Hampton (32083) cow, $157.00, heifer calf, $90.00, E. M. Wardhope, Milford, N.S. Julia, (38525) cow, $135.00, W. E. Crouse, Stewiacke, N.S. Pisgah White Daisy (48058) cow, $144.00, E. R. Stewart, Old Barns R.R. No. 1. Yearling heifer, $65.00, Gordon Fulton, Stewiacke, N. S. Heifer calf, $46.00, John Kelly, Stewiacke, N.S. Heifer calf, $33.00, Brenton Miller, Schubenacadie, N.S.

Stick to Type.

At the recent meeting of the Holstein-Friesian Breeders' Association in Syracuse, New York, the president of the Association, D. D. Aitken, said a few things in regard to the relative importance of fat percentages and conformation that may well be kept in mind by all breeders of dairy cattle put on production records.

"Without a fixed standard or guide," said Mr. Aitken, "and with the retrograde influence which accompanies all efforts at improvement, we shall lose sight of those characteristics which are vital to continued success. Size, vigor, hardness and pleasing symmetry of form can be maintained only by unceasing effort, and these are in no way incosistet with high production. The scale of points must not be even slightly obscured by the dazzling glare of phenomenal fat percentages of the pedigree. Too early and too frequent breeding, and neglect to grow the animal in its youth, are the besetting sins in this connection."

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Change of Time January 9th.

On Sunday, January 9th, the Maritime Express will run daily between Halifax and Montreal, leaving Halifax at 3.00 p.m. Connection will be made at Moncton to and from St. John daily. The Ocean Limited will not leave Halifax Sunday, January 9th, but will leave on its present schedule time 8.00 a.m. daily except Sunday thereafter. Its continuance during the winter months will be pleasing news to thousands of travellers to whom the "Ocean" appeals as an express train of excellence in service and comfort in travel.

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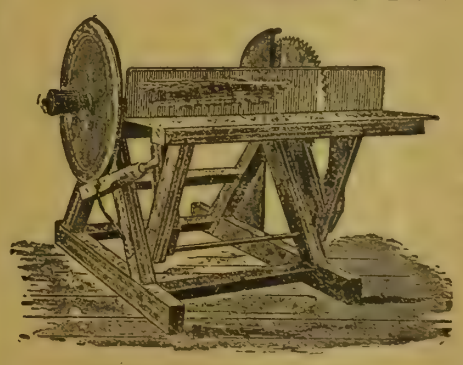

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Volume 21. SUSSEX, NEW BRUNSWICK, JANUARY 25, 1916. Number 8.

For a United Policy re Agricultural Education.

Secure Better Results and Save Public Money--Opening New Science Building N.S.A.C.

Important pronouncements marked events at the Agricultural College, Truro, on the evening of January 11th. For the past few years big things have had the habit of transpiring in connection with this provincial institution, but it is doubtful if any previous utterances meant more to the Province of Nova Scotia. They came from three sources, Dr. C. C. James, Commissioner of Agriculture for Canada; Hon. J. A. Murray, Minister of Agriculture for New Brunswick, and Hon. G. H. Murray, Premier of Nova Scotia.

The first named was present for the purpose of officially opening the new Science Building in connection with the Agricultural College. This event took place in the lecture room of the new building. The building was crowded to its utmost capacity, the crowd overflowed all through the many rooms and many were debarred the privilege of hearing the Doctor's eloquent speech. The meeting was to have been presided over by Miss Jennie A. Fraser, superintendent of Women's Institutes, but illness prevented her being present, and Principal Cumming filled the chair. In introducing Dr. James he referred to him as the foremost figure in agricultural education in the Dominion, and the compliment he paid the College in coming from Toronto on this occasion.

Congratulated Nova Scotia

Dr. James was tendered an ovation, and in reply treated his hearers to a masterly presentation of the urgent needs of education along the more practical lines, the lines which dealt with the problems of daily life. He congratulated Nova Scotia on its lead in Canada in technical education, but even at that it did not go far enough. The outstanding need was for an education suitable for people in rural life. His own province—Ontario—boasted of its educational features, but of its four thousand schools there was not one that did not tend to educate the young man and the young woman away from the farm. He spoke of one school established in Alberta along practical rural lines and saw in attendance at it 120 young men and 60 young women all eager for a practical education. He congratulated the Agricultural College at Truro on the new Science Building. Its purpose was to educate the women and girls of the farm and better the home life in the east. The new building was as good as any in Canada for the purpose. The work of education of the women was the most important that could be undertaken. and he believed that a great blessing was in store for the women in rural parts of the Province should they take advantage of the opportunities this new school offered.

Ovation for Soldiers

At this junction the crowd in the building became so large that it was found necessary to adjourn to the larger assembly hall in the main building. Here, too, the capacity of the hall was taxed, and among the audience were many members of the 106th Rifles. To them was accorded seats of honor in the front, and the immense audience rose to its feet and cheered the boys in khaki as they entered the hall.

THRESHING CLOVER SEED IN QUEBEC

The above is a clover huller at work at Lennoxville, Que. It was purchased cooperatively by the farmers of the district, and this year threshed a very good crop of seed. When the farmers grow their own clover seed they will sow more pounds to the acre, seed more annually, reap better crops and have more fertile farms.

A Truro exchange recently said:

"A clover seed thresher was in our vicinity last week under the management of Willard Thompson of River John and Clifford D. Langille of Marshville.

"It is through the influence of the managers of the Agricultural College, Truro, that this thresher is sent out in the country, and it is also an experiment of theirs, which we think will prove successful. This thresher has only been in the country districts now for three weeks, starting in the vicinity of River John and taking in the country from there to here in that time.

"The clover thresher and gasoline engine, which is its power, are both on portable trucks. The thresher looks something like a comomn grain thresher, but it is somewhat larger.

"We are told that after the clover seed is threshed out of the clover and hay that it does not at all injure the hay.

"In an interview with Mr. Thompson, one of its managers, he told us that it was the only machine, or rather, clover thresher, in the Maritime Provinces, it having been brought down from Ontario; also that it was to be sent throughout the three counties, Colchester, Pictou and Antigonish.

"The farmers in our vicinity should all take this opportunity of having the clover seed threshed out of their hay and clover, as you all know what a high price clover seed was last spring, which was about 22 cents per pound, and today it is from 25 to 29 cents per pound, and is steadily on the increase in price. In River John, after the thresher passed through, the farmers who did not have their clover threshed are now regretting the fact; so we again repeat, take this advantage and have your clover threshed, then it will not have to be imported from Ontario as formerly.

"After this experiment has been made in the aforementioned counties this machine will be put on the market for sale."

Premier Murray's Address

When order was resumed Principal Cumming introduced Hon. G. H. Murray. The premier was in fine form. He caught the enthusiasm of the audience and was closely followed throughout his address. In a general way the premier referred to the duty of guaging public opinion that confronted a public man. He dealt with the surprising changes in this regard in consequence of the outbreak of the present war, but on one score he felt that there could be no mistake and that was the great question that now confronted the people of Canada—the question of an education that dealt with the problems of the daily life of the farmer, the miner, the fisherman and the lumberman. The most valuable asset Canadians had was land. The land had attracted thousands to homes within its borders and of all Canada he believed Nova Scotia was the most blessed. "We are not so optimistic as in the West," declared the speaker, "but take it from me, a man on the farm who works as hard, gains just as profitable and an easier livelihood than any in the west. While lacking the boast we have the assets."

He then turned to the subject of closer co-operation in improving interests common to three Provinces in the East. On the subject of farming New Brunswick, Prince Edward Island and Nova Scotia could get together on common ground.

It was a common problem. To talk of legislative union opened a question for diversity of opinion and discussion, but with respect to the [illegible] problem they could pursue a united policy. He could see no reason why the three provinces should not stand together on this subject of agriculture secure better results, and save public money. He hoped a commencement, as a result of this gathering, would be made. He and the other gentlemen met not as policitians, they were not talking as party men, but to stimulate education in the interests of the great national resources, so that the men and women of the future might be better able to take every advantage of the wealth of these resources.

The Science Building to educate the women was a grand step, and one that commended itself to all thoughtful people. He thanked Dr. James for his kind expressions of the Province and its educational progress.

Good Word for Soldiers

Premier Murray then had a word to say to the soldier lads in the front of him. It was this:

> "Boys, if you are as good men as the Canadians who have gone before to France, your country will be proud of you. I believe you are."

The speaker referred to the splendid generosity of the people of Nova Scotia, in appeals for the Belgian relief and all other patriotic purposes. They might ask the question, have we done enough? Living in this land of plenty no one had suffered, but in devastated Poland and Belgium there had been suffering. Other calls would be made and the people would give. They were ready to respond, he believed. and share their bounties with those who had suffered in this righteous war.

(Continued on Page 265)

N. S. Fruit Growers in Annual Session

Fifty-Second Annual Convention.

The fifty-second annual meeting of the Nova Scotia Fruit Growers' Association was held in the Opera House, Wolfville, on the 18th, 19th and 20th inst.

The opening meeting was called to order by A. E. MacMahon, president of the Association, whb read the customary presidential address, after Dr. H. T. DeWolfe had invoked the divine blessing.

Prof. W. H. Brittain followed with an instructive lantern lecture on "Sucking Insects of the Apple." Prof. Brittain never fails to interest the fruit growers of Nova Scotia and his address on this occasion was no excep tion. So well was the subject illustrated and presented that the growers were unanimous in their demand that Prof. Brittain deliver the same address at a series of meetings to be held in the various sections of the fruit growing counties. The address will be published in the columns of the Maritime Farmer in subsequent numbers.

Dr. G. B. Cutten of Acadia University and Prof. M. Cumming, were the other speakers of the evening. Dr. Cutten very humoriously remarked that while attending Acadia as a student he could make his way in the dark to the trees in the respective orchards surrounding Wolfville that bore the most luscious apples.

The Wednesday morning session was devoted to the busines of the Association. The secretary-treasurer's and auditor's reports were read by Manning K. Ells, secretary of the Association. The cash balance on hand after all bills had been paid was $182.12. The total receipts for the year including last year's balance of $193.65 was $1,063.44.

The Maritime Farmer was again unanimously adopted as the Association's official organ.

Mr. S. C. Parker gave a verbal report of the advertising committee's work. The committee's secretary, Mr. B. F. Lawson, who is at present in England, will have a full report to submit to the members through the columns of the Association's annual report.

The Election of Officers

resulted as follows:

President—F. A. Chipman, Nicteau.

Vice-President—Prof. W. S. Blair, Kentville.

Secretary—Manning K. Ells, Port Williams.

Assistant Secretary—F. W. Foster, Kingston.

Treasurer—Geo. W. Munro, Wolfville.

Executive—A. S. Banks, Berwick; S. C. Parker, Berwick; Fred. Johnson, Bridgetown; J. Elliott Smith, Wolfville.

Delegates to the N. S. Farmers' Association—Chas. Hogan and F. W. Bishop.

The Advertising Committee—A. E. MacMahon, F. W. Foster, S. C. Parker, E. H. Johnson and J. E. Shaffner, were reappoitned.

Prof. M. Cumming told the fruit growers that he had been asked to appear before the Economic and Development Commissian recently appointed by the Federal Government. He invited the fruit growers to express their wishes re any matter they would like brought to the attention of the commission. As a farming country Nova Scotia possesses assets that are not excelled by any other part of Canada. Among those mentioned were: "Precipitation of Rain," "Access to Markets" and a soil that is about the average in point of fertility, not very poor and not very rich. Fertilizers therefore have a place in Nova Scotia, if we are to procure maximum yields.

He referred to the dogfish rendering works at Canso and Clarks Harbor and the nitrogenous fertilizer there produced and asked "Shall we agitate for increased production in the fish plants referred to. What about the fish offal all along our shores? Can something be done to make it available to the farmers? Prof. Cumming also referred to the necessity of using lime commendations re matters requiring on the farms of Nova Scotia and referred to the cheap freight rates that railroads in Illinois give on this commodity. Mr. S. B. Chute referred to the 10% duty on acid phosphate as cruel as well as the 25% duty on sulphur. He thought the commission might do something towards removing these duties.

A committee consisting of S. B. Chute, Prof. M. Cumming, R. J. Messenger and A. E. MacMahon was appointed to work with the resolution committee, Chas. Hogan, S. C. Parker and Col. S. Spurr to formulate re reters requiring the attention of the inthe attention of the Economic and Development Commission.

The committee brought in the following resolutions at a later session and they were carried unanimously.

Resolved: That the N. S. Fruit Growers' Association beg to bring to the attention of the Economic and Development Commission the increased demand for dog fish fertilizer, which at present is far below the requirements, and would suggest that the possibility of increased production be dealth with.

Resolved: That whereas the Federal Government, recognizing the necessity of increased and cheaper production of the products of the farm at this time, the N. S. Fruit Growers' Association beg to bring to the attention of the Industrial and Economic Commission through the Secretary of Agriculture, the urgent necessity of placing all fertilizers on the free list, thereby enabling the farmer and fruit grower to cheapen production.

The following resolution brought in by the committee for the consideration of the Fruit Growers was also carried unanimously.

Resolved: That, weheras in pursuance of our resolutions of last year asking the local government to assist the beekeeping industry which is threatened with extinction by Foul Brood Disease, and whereas the government sent experts into our province to investigate the situation and advise beekeepers, that we, the Nova Scotia Fruit Growers' Association again respectfully bring to the attention of the Secretary of Agriculture the immediate need of having a competent person appointed to inspect apiaries and give instructions to beekeepers how to combat the foul brood disease.

And further resolved: That the local legislature at the next session be asked to pass an act for the suppression of bee diseases similar to the acts of Quebec and British Columbia.

Two excellent addresses, one on "Results Obtained at the Dominion Entomological Laboratory During 1915," by Geo. E. Saunders and the other "Fertilizing Orchards in Nova Scotia," by Prof. W. Saxby Blair, and profitable discussions on same engaged the attention of the fruit growers on Wednesday afternoon.

We have copies of both addresses and they will appear in full in future issues of the Maritime Farmer.

The opera house was crowded to the doors on Wednesday evening when an interesting debate took place on the subject: "Resolved, that the general adoption of mixed farming by which is meant the keeping of live stock and the raising of feed for the same, in addition to fruit growing, is in the best economic interest of the farmers of the fruit growing counties of Nova Scotia."

The leaders for the affirmative were: F. W. Faster and R. J. Messenger. The negative leaders were W. H. Woodsworth and A. E. MacMahon. Dr. G. B. Cutter of Acadia, acted as judge.

Messrs. S. C. Spurr, S. B. Chute, John Donaldson, A. N. Griffin, H. S. Shaw, M. K. Ells, Chas. Hogan, Ralph Creighton, A. S. Banks, R. W. Starr, Geo. McLean, and Norman Osborne took part in the discussion.

Some interesting facts and figures were furnished by several of the speakers. Mr. S. B. Chute gave figures in favor of specializing in fruit, that showed a gross income for 1915 of $21,440. Expenditures, $11,275 leaving a net balance on the year's work of $10,165. F. W. Foster gave figures that showed a tidy income from mixed farming in addition to fruit growing. Several of the speakers said that were it not for the income derived from their mixed farming operations they would have been financially embarrassed during off years in fruit growing.

Dr. Cutten's decision was in favor of the resolution.

"Some Lessons Learned from New England Fruit Growers," was the subject of an interesting talk by W. H. Woodworth, who has for the past two or three years spent considerable time as a speaker in Maine and Massachusetts.

W. B. Fawcett, Sackville, N.B., one of the largest if not the largest grower of strawberries in the Maritime Provinces, gave an instructive talk on "Commercial Strawberry Growing and Marketing," which was listened to with keen interest by the fruit growers.

M. B. Davis, assistant Horticulturist, Ottawa, a graduate of the N. S. A. C., Truro, gave a lantern lecture on "Why We Should Prune, and the Different Treatment for Old and Young Orchards." Mr. Davis is a Nova Scotian, one of our boys who is rapidly making a reputation for himself, as so many other Maritime Province men have done in the past. His lecture was the best talk on pruning ever delivered before the Nova Scotia Fruit Growers' Association. A lengthy discussion ensued and Mr. Davis answered questions and gave reasons why in a clear and convincing manner.

The last number on the programme was a paper prepared by Prof. W. Saxby Balir on "Scab Control in the Dominion Experimental Orchards in Nova Scotia." Prof. Blair was unable to be present so his assistant, Mr. Lindsay Bligh read the paper and made explanations where necessary.

PRESIDENT'S ADDRESS

Members of The Nova Scotia Fruit Growers' Association, Ladies and Gentlemen:—

At this, the fifty-second annual meeting of the Nova Scotia Fruit Growers' Association, it becomes my duty and privilege to present a report to you covering our experience as farmers and Fruit Growers during the year since we last met. Greatly have the condtiions changed and how those changed conditions have affected our interest will be the principal theme of my address.

Ordinarily it would not be necessary to give reasons why so many shillings per barrel would not give a net return of so much, inasmuch as there was a similarity of conditions covering Transatlantic shipments from all North American ports.

War conditions have made a change so great along these lines that it would seem imperative to place the actual facts before you, in order that those who are uninformed might have an exact knowledge of conditions and, further, that discouragement may not debar the Fruit Grower and Farmer of this beautiful province from thus partially reaping an advantage over their less fortunate competitors.

As I stated before, war conditions have made a different order of things necessary and we in Nova Scotia, from a financial standpoint, have not suffered from the effects but rather our conditions have been bettered on account of such heavy purchases of war material and the training of soldiers in our midst.

War has already been looked upon as something worse than the most dreaded disease. In contemplating conditions in war times, it would appear to us as being almost impossible to live and follow the usual routine of our daily duties but war in all its horrors surrounds us at the present time, and, while we do not look for an invasion of our country, yet we do feel that being an integral part of the British Empire it becomes our duty to give of our sons and our daughters and of our means, as the case may be, believing that we are doing so in defence of those principles that are dear to the heart of every Canadian, whether living in Canada or elsewhere.

It was belived by the Fruit Growers themselves, that their industry would be practically ruined during the period that war was being conducted. Such has been the case in other countries. So far Nova Scotia has occupied a superior position, as far as transportation and marketing have been concerned.

At the beginning of the present season, when the trees were in full bloom, the belief prevailed that the fruit crop of 1915 would be a record one, later in the season we realized that our anticipations would not be fulfilled. Weather conditions were unfavorable and as time passed we saw the porspect that at first looked very favorable fast disappearing and we were forced to believe that the total number of barrels would be far below the average. But, with the usual fortitude that characterizes the good Canadian, we accepted the inevitable and turned our attention to other sources of revenue in order that our necessities might be properly provided.

While the quantity of fruit is, and we suppose will continue to be the first consideration, yet we are pleased to know that a great many of our up-to-date Fruit Growers consider quality should have the preference, with the result that they have been successful in making a favorable comparison with seasons that were better adapted to clean fruit and when we consider that proper spraying increases quantity as well as quality, we can readily see the benefit of the investment.

Weather conditions were such during the past season that it became necessary, in order to obtain good fruit, to make constant and scientific use of the power sprayer. When this was done clean fruit in most cases was the result and, when we consider the increased cost of marketing, the facts are brought forcibly to our attention that we cannot afford to grow fruit of an inferior quality. Mr. Sanders will later place facts and figures before you that cannot fail to be absolutely convincing in every respect.

We do not feel that the Fruit Growers of Nova Scotia fully appreciate the good work done by Mr. George Sanders, our popular entomologist. Ever busy, never failing to encourage spraying, pruning and proper attention to

the cultivation of the soil, always willing to give information of value, he certainly has become almost indispensable in connection with the Fruit Industry of Nova Scotia and occupies a position, the value of which cannot be over-estimated.

The potato crop, although light has been remunerative. High prices have prevailed since the beginning of the season and the same continue strong The present prospect is that record prices per barrel will be obtained.

To return to my introductory remarks concerning the comparatively favorable conditions enjoyed by the Nova Scotia Fruit Grower, it is my intention to place before you a table showing the comparative rates prevailing from various ports to the markets of Europe covering a period of three years. These tables will set forth the advantageous position of Nova Scotia and show you that our location has been the means of giving us a service better than that obtained by any fruit producing country in North America and that the expenses necessary for transportation and marketing are much less than those enjoyed by any fruit producing country using the same markets.

In discussing the fruit situation with many growers, I find an air of discouragement prevailing. The common expression being, "What will we do with our fruit next year?" The same expression has been used as frequently during the past two years, or since the war commenced. So far as we know and believe the price of fruit in Nova Scotia has not been materially affected on account of the war. Ontario has been unable to compete with us on a favorable basis as far as expense is concerned, while they have not had a regular line of sailings during the season; Nova Scotia has not only enjoyed a fairly regular service to England, but has been able to make full use of the home markets placing a much larger quantity on this side of the Atlantic than many would have deemed possible. We believe that the thanks of the Nova Scotia Fruit Growers are due to Messrs. Furness, Withy & Co., who under adverse conditions have rendered us such admirable service compared with that of other countries and also for the comparatively low rates that have existed from the Port of Halifax during the present season.

We wish to record our appreciation of the active interest taken in the handling of our fruit by Mr. J. E. Furness, the Canadian manager of their service, and we believe that had it not been for his personal influence, instead of paying but five shillings per barrel, the rate from the port of Halifax would have been equal to the rate from the ports of Montreal. The labor question in London has very seriously hampered operations. In some cases ships have been as long as thirteen days in discharging their cargoes. This state of affairs has been brought about by the fact that there is a great scarcity of male help, so many having enlisted and are serving their country at the front. An attempt was made to remedy matters by introducing women laborers but the men who were employed immediately went on strike so that it became necessary to discontinue the idea.

This shortage of labor constitutes one of the many draw-backs to the obtaining of better prices on the London market during the present season and we believe that while we are as vitally interested in the present war as England herself, yet we realize the fact that we are not making our interest as peronal as is the case in the Mother Country. Clerks have enlisted to such an extent that business has been almost brought to a standstill and in some cases our own funds are held over for days and sometimes for weeks before we are able to get settlements. However, we do not consider it right or wise for us to make complaint along these lines. We feel it our duty ot accept conditions as they are and do the best we can.

The Table that I am giving you below will make the Fruit Growers understand how much more favorable their position is than that of the Fruit Growers in the countries which I have already mentioned and feel that we should go forth with renewed efforts propogating and developing this great industry that has become famous throughout the world.

TRANSPORTATION EXPENSES TO LONDON.

Season 1915 to 1916.

From	Annapolis Valley	Forest, Ont. & Lucknow. Ont.	Coburg Ont.	Maine Apples		West. N. York	
via	Halifax	Montreal	Montreal	Portland		New York	
				Some Boats	Other Boats	Some Boats	Other Boats
Inland Rail	$ .17	4 .44	$ .31	$ .17	$ .17	$ .28	$ .28
Ocean Freight	1.25	1.75	1.75	1.75	2.00	1.75	2.00
Dock Dues & P.L.A.	.09	.09	.09	.09	.09	.09	.09
Cartage	.10	.10	.10	.10	.10	.10	.10
Insurance	.05	.05	.05	.05	.05	.05	.05
Commission 5%	.18	.21	.21	.21	.21	.21	.21
Handling	.06	.06	.06	.06	.06	.06	.06
	$1.90	$2.70	$2.57	$2.43	$2.68	$2.54	$2.79

COMPARATIVE EXPENSES FROM THE ANNAPOLIS VALLEY.

From 1912 to 1916.

to London	1912-13	1913-14	1914-15	1915-16
Inland Rail	$ .16	$ .16	$ .16	$ .17
Ocean Freight	.60	.66	.78	1.25
Primage	.03	.03	.04	
Dock Dues and P.L.A.	.08	.08	.08	.09
Cartage	.08	.06	.06	.10
Insurance	.02	.02	.04	.05
Commission	.18	.18	.18	.18
Handling Charges	.10	.06	.06	.06
	$1.25	$1.25	$1.40	$1.90

Nova Scotia apples reckoned at 15s.; Ontario and American at 18s.

We will examine these tables for a few moments, although they are practically self-explanatory.

The first pecularity will be immediately apparent to all, namely, the tremendous advantage of Nova Scotia over all her competitors. Our proximity to the Atlantic seaboard with an open harbor all the year round and our nearness to the world's greatest market will always be our greatest asset.

With the exception of the State of Maine, we have a great advantage in the cost of rail haul; we have a shorter ocean trip and government subsidized fruit boats, which ensure for us a better freight rate that than enjoyed by our competitors.

We therefore have an advantage by virtue of our location that places us in a position which can be calculated as 53c to 78c per barrel over the State of Maine; 64c to 89c advantage over Western New York; 67c to 80c over Ontario.

An examination of the second table will show, however, that owing to war conditions, it is costing us 65c per barrel more to place our fruit in the hands of the wholesale trade in England than it did in 1912.

A peculiarity of this table is noticed in the comparison given between the years 1912-13 and 1913-14; in the latter year, while the ocean freight was higher, yet the total cost of transportation was no greater than in the case of the former, owing to the fact that cartage and handling charges were reduced in London.

The Nova Scotian apple has fast become popular and we believe will continue to be so during the coming years. The quality of our pack being so much improved appeals with more force to the consumer. We believe the campaign put on by the Dominion government advising the people to eat fruit has had a marked effect and we have every reason to feel satisfied that, no matter what conditions may be in the future, the Fruit Growers of Nova Scotia will be able to hold their own with any fruit-producing country in the world.

At the last Annual Meeting of The Nova Scotia Fruit Growers Association a committee was appointed to interview the Fruit Commissioner in connection with the construction of a building for the purpose of conducting experiments along entomological lines. Mr. Johnson promised to take the matter up with the government and recommend the same. As a result and also through the hearty co-operation of Dr. Hewett, we have the building and we believe the information obtained as a result of the experiments by Mr. Sanders will be appreciated by all.

We also wish to record our appreciation of the prompt attention given this mtater and other matters appertaining to the fruit industry by the present Fruit Commissioner, and also to express the opinion that he is the right man in the right place.

Your committee appointed to take charge of the advertising campaign have followed your instructions with the result that Mr. Lawson is now in England obtaining information and we believe inaugurating a policy that must be of immense value to the Fruit Growing Industry of Nova Scotia. His report will be submitted later.

Another matter that has claimed our attention was the ntoice given by the Dominion Atlantic Railway Company that on and after the 10th day of October an increased rate on fruit to Halifax would be in force. Mr. W. H. Chase suggested that a delegation should meet with Mr. P. Gifkins, general manager of the Dominion Atlantic Railway Company, and enter a strong protest against the increase. As a result, Mr. Cahse, Mr. Oyler and myself interviewed Mr. Gifkins and laid our case before him. We were informed that the Railway Commission was the only body who could adjust that matter as the railway company had already forwarded the amended tariff for their approval. We immediately notified the commisison that we would be prepared to place objections to the proporsal of the Dominion Atlantic Railway Company before them at their earliest convenience. The railway commission notified us that they would be pleased to hear our arguments on October 22nd at Kentville.

A large number of gentlemen representing the Fruit Industry appeared before them and made a strong appeal against any charge in the railway tariff at the present time and especially under existing conditions, but our arguments were of no avail The commission upheld the recommendations of the railway company.

While we do not consider the increase (one-half cent per barrel) to be worthy of too much attention, yet we do feel that it was and is a stepping stone to the general policy of increases along various lines with which the fruit growers are most intimately concerned. In our opinion the classification of fruit under present rates is altogether too high. We are informed that a re-arrangement of the general classification schedule will be made by the railway companies of North America within a short time and I would earnestly suggest that The Nova Scotia Fruit Growers' Association be strongly represented and that all that can be done to place the freight on fruits in the proper classification be done.

Ladies and Gentlemen: I thank you for the honor conferred upon me at your last annual meeting and for the privilege of having enjoyed the distinction of being your president during the past year. I trust that your deliberations during the session may be of benefit and that good may result therefrom. We are now passing through the most trying experience, as a nation, and may the same spirit that prevails in the front of the Battle in which our soldiers are engaged, permeate our home life in order that our full duty may be done.

Boiling in Creosote Preserves Fence Posts.

Heating Process Insures Better Penetration of Fluid Than Painting or Dipping

"The fence post problem is becoming important," says Prof. W. J. Morrill, of the Colorado Agricultural College. "Good material is very expensive. Pitch posts, once purchased for as little as ten cents each, now bring 35 to 40 cents—but they alst a generation.

"Idaho cedar posts cost around 15 cents, but they last only four or five years. The increasing cost of wood posts has brought the iron post and the cement post on the market. There are serious objections to both of them, because of cost, weight, difficulty of attaching wire, and the crumbling of cement in alkaline soils.

"The railroads have been preserving ties for many years, the telephone companies have reduced their annual cost per pole by treating the butts of their poles, and at last the farmers are beginning to preserve their fence posts. Coal tar creosote of a grade that is not heavy, and in penetrating, is used largely. While the railroads preserve their ties by forcing creosote oil into them by hydraulic pressure in closed tanks, the farmer has to cotnent himself by using atmospheric pressure in open tanks. This is done by boiling creosote for from one-half to three or four hours, according to the species of wood, and then letting the posts cool in the liquid.

"The heat forces a part of the air out of the wood, but as the cost cools, the air that is left in the wood contracts and a partial vacuum thus formed forces the creosote into the wood for a quarter or half an inch or more; at any rate, further than the penetration gained by merely painting or dipping.

"These last methods, however, are worth while, if the farmer is not prepared to use the "open-tank" method. A farmer can save half his post expenses by using preserved posts. Often he can do better than this by utilizing cottonwood, willow, soft maple, and other wood he can grow on his farm, and make last for 15 or 20 years by creosoting them."

Watch the horse in the barn when he starts to pull back on the halter, and just when he has the rope stretched good and tight hit the rope sharply with a pitchfork handle or something of the kind. This will give him a sharp shock and often will induce him to abandon the habit.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. When paid in advance 80 cts. Persons taking advantage of the 80 cent rate are only entitled to it by paying in advance each year. When subscription gets in arrears, $1.00 per year will be charged. Subscribers are requested to bear this in mind. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written complaint must be made to the publisher within one week from the date of any unsatisfactory transaction, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said:—"I saw" your adv. in the MARITIME FARMER.

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NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

RECEIPTS FOR FARMER SUBSCRIPTIONS

The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

JANUARY 25, 1916.

DATES OF ISSUE.

February	8-22
March	7-21
April	4-18
May	2-16
June	6-20

DISTRICT REPRESENTATIVES WORK.

Among the activities promoted and encouraged by The Agricultural Instruction Act, now in its third year of operation, having come into force in June, 1913, as detailed in the report recently presented by the Commissioner of Agriculture, and which can be had on application to the Publications Branch, Ottawa, there is none that exceeds in influence and usefulness the work done by the District Representatives. Their duties are manifold and unceasing, but their helpfulness in the agricultural industry is abundantly testified to in every district where they have been appointed, and there are now 45 of them in Ontario alone. It is theirs not only to be ever ready with counsel and advice on farming subjects but also to manifest a live and active interest in every undertaking having for its object the better cultivation of the land, the increase of productiveness, the development of the live stock industry, the improvement and etxension of educational facilities, the social uplift of the people and the welfare of the agricultural community generally. In short their usefulness can hardly be over-estimated, and towards their support the funds forthcoming from the ten-million dollar grant provided to be distributed among the provinces during a term of ten years under The Agricultural Instruction Act, is largely devoted. All this is fully detailed in the Report of the Commissioner previously referred to and which affords instructive reading. Taking the provinces separately we find that the amounts directly utilized for this purpose in 1914 were:

Prince Edward Island	$ 4,000
Quebec	10,000
Ontario	80,000

In most of the other provinces the system has not yet been organized under the title of District Representatives, but in all of them the funds allotted find a somewhat similar disposition in furnishing means for the promotion of demonstration work. In Nova Scotia $4,200 was so employed in 1914 and in New Brunswick $14,200 under the title of travelling instructors. In Manitoba upwards of $30,000 of the grant of $51,720 was disposed of by means of demonstrations. In Saskatchewan $27,148 and in Alberta $14,594 practically went the same way. In British Columbia $27,500 was devoted to demonstration work. In Prince Edward Island, Quebec and Ontario besides the amounts mentioned as directly used in the maintenance of the District Representative system substantial sums were also supplied to demonstration purposes.

THE FARMER WHO USES HIS HEAD.

Charles H. Meiers.

It isn't just sowing the right kind of seeds
That wins; for good seeds may be sown
In soil that may give up its life unto weeds
Which claim the seed bed as their own;
It isn't the skimming o'er many broad fields
That brings home the bacon and bread:
It's isn't the numskull that gets the big yields—
'Tis the farmer who uses his head.

It isn't the farmer who tills the most soil
That gets the best pay for his work;
It isn't a question of how much men toil,
Although it will not pay to shirk.
The man who succeeds is the fellow who tries
To learn the best methods, instead
Of plodding on blindly; he tries to "get wise"—
The farmer who uses his head.

DEVELOPING THE BOY AND GIRL.

Of the activities encouraged and promoted by funds provided under The Agricultural Instruction Act of the Dominion none is more worthy than the improved means which have been made possible for the development of the juvenile mind. There is but one way that the boys and girls can be rivetted to the soil and that is by strengthening their attachment for it. This can only be accomplished by the inculcation of knowledge presented not altogether in utility fashion but in a manner that will emphasize the brightness, the wonder and the attractiveness of the works of nature. This the boys' and girls' clubs are doing; this the school fairs are doing. This the nature study classes in the public schools are doing; this the school gardens are doing. They encourage association and sociability in the first instance, a desire for emulation in the second, a favorable disposition for the outdoor life in the third and an appreciation not only of the marvels, but also of the beauties, of creation in the fourth. All four divisions of the work receive substantial support in every province from the grants derived under the Agricultural Instruction Act. In Prince Edward Island, the sum devoted to these purposes in 1913-14, the first year the Act was in operation, was $5,529; in the third year, or in 1915-16, it is $10,050. In Nova Scotia the sum thus employed under the Act in 1913-14 was $6,700; in 1915-16 it is $10,000. In New Brunswick in the first year it was $1,500. In the third year it is $10,000. In Quebec the first year it was $3,000, in the third it is $8,000. In Ontario it was $10,000, it is now $20,000. In Manitoba it was $2,000, it is this year $5,200. In Saskatchewan it is $2,100. In British Columbia $1,000 was so used in 1913-14, but this year for boys and girls competitions, fairs, etc., and instruction in public schools, $17,000 is to be spent from the grants. It must be understood that while in some of the provinces the money is directly employed for the purposes set forth, in others it is used in other ways and the sums required for school fairs, school gardens, and so on, are received from provincial and municipal sources. The figures, however, are in themselves abundant indication of the far-reaching benefits conferred by the Act.

AID TO AGRICULTURAL COLLEGES AND SCHOOLS.

The grants under the Agricultural Instruction Act being supplemental to those from provincial and other sources make many things possible that otherwise would be considered impracticable by reason of the expense involved. In particular are they valuable in the prosecution of the higher education in agriculture. By the help of these grants not only are agricultural colleges and schools made more efficient in equipment, but it is made possible to pay men of first class information and experience salaries becoming to their station. Further graduates who have passed with honors and obtained degrees in our own colleges and universities are induced to stay in their own country rather than to go abroad in search of remuneration to which their ability entitles them. Indeed, several good men have already been repatriated and have accepted lucrative engagements in the land of their birth. How far the funds are being used in this direction is indicated by the following appropriations made from their allotments for 1915-16 by the different provinces immediately for schools and colleges, apart from extension work, short courses, demonstrations, etc.:

Prince Edward Island	$ 10,050
Nova Scotia	27,500
New Brunswick	16,500
Quebec	60,000
Ontario	93,813
Saskatchewan	22,800
Alberta	38,000

Manitoba and British Columbia apply portions of the fund in a similar way but through the public, normal and high schools, and thus the grants appear under another heading than agricultural schools and agricultural colleges.

GOOD READING MATTER.

One of our readers makes the statement that advertising is good reading matter. He is right too. A great deal of time and thought is spent on the writing of advertisements; we once heard an advertising man tell how he and two others spent a whole evening writing seven words. That being the case, ads. ought to be good reading matter.

After one starts the practice of reading advertisements, he soon finds that they contain very interesting reading. They keep us up to date on all the newest things on the market. In them we can frequently find valuable ideas and suggestions. They bring us into closer touch and sympathy with the advertisers.

Read more of them and see for yourself. If habit of reading the ads. as well as the articles.

"A friend in need is a friend indeed," is as true today as it was years ago. Farmers who organize because they are in need and when the organization has been a friend, desert the movement, have not yet learned to know the force of the above saying.

N. A. S. C. Short Courses.

The Short Course at the College of Agriculture, Truro, N.S., which was conducted from January 4th to 14th last, was one of the most successful of the whole series of courses which have been conducted at this institution during the past eleven years. It was to be expected that the large military enlistment would result in a somewhat reduced attendance, and yet 205 enrolled in the men's short course and 50 enrolled in the women's short course; especially when it is considered that all but some four or five came from the province of Nova Scotia alone this must be regarded as a very high attendance. A striking feature was the large attendance from some of the more distant parts of the province which had not previously been represented at the College.

The greatest interest in the course centered around the instruction in the care and management and judging of dairy cattle, in the selecting and judging of seed, and in the information which was given relative to the use of ground lime stone. With respect to the first the inspiration afforded to the students by studying the magnificent collection of dairy cows which are now housed at the college stables was sufficient in itself, especially when among the number were several cows that had given over 15,000 lbs. of milk during the year, an done that will complete her year's work with nearly 23,000 lbs. of milk to her credit. At the time when the short course was in sessions the cows were being fed ensilage made from oats, peas and vetch, or as Professor Trueman calls it O. P. V. ensilage. This mixture has given excellent satisfaction where lack of heat and danger of frost makes corn an uncertain crop.

In regard to the use of lime stone, the results of Professor Trueman's experiments on the college farm were extreemyl interesting. The most striking experiment was that with clover, two half acre plots of which averaged 1¼ tons more clover per acre on limed areas than on adjoining unlimed plots. However, on a very rich piece of land where the same experiment was tried practically no difference was noted, and on the very poor areas the difference was very small indeed. Practically all the soil on the College farm gives a slight acid reaction to the litmus test, as do most soils in Nova Scotia which have been investigated by the College Chemist. This indicates the necessity of liming. That the college management believe in their experiments is indicated by the fact that they are this year applying to various fields upwards of 150 tons of ground stone. Provided the material can be purchased reasonably enough they do not hesitate to advise any farmer in Nova Soctia who is trying to permanently build up the fertility of his farm to use ground lime stone at the rate of 3 to 4 tons per acre. Contrary, however, to a good many statements which have appeared elsewhere, the college management points out the fact thta these striking results from the application of ground limestone have been on the lighter, sandier soils from which analyses show the lime stone has in the course of years been leached out.

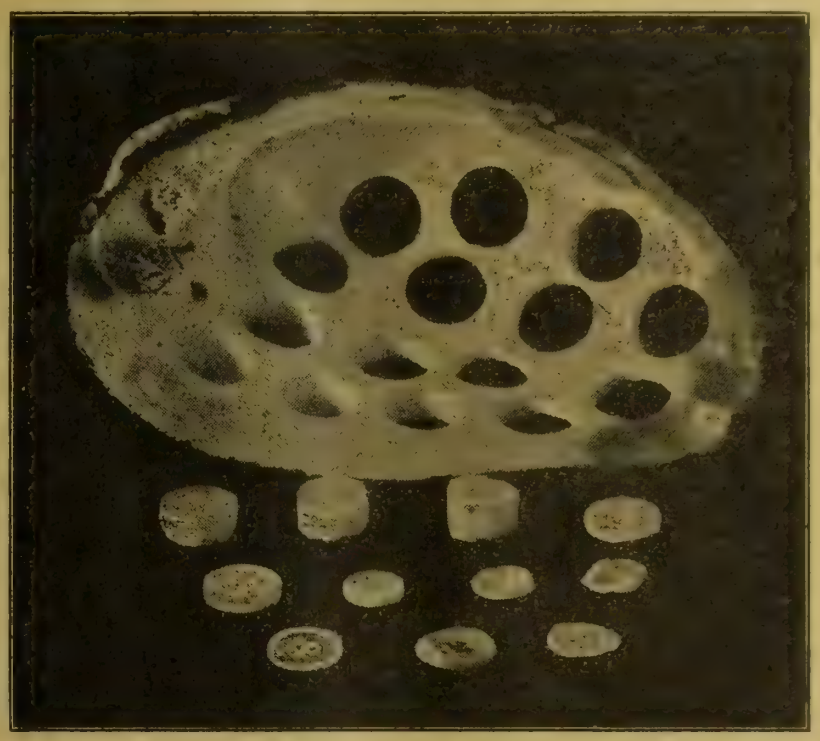
From beginning to end, the seed judging classes which were conducted by T. G. Raynor of the Federal Department of Agriculture were followed with the closest interest, for farmers have come to recognize that if they would produce bigger crops without any more labor to assist them, one of the most vital points is the securing of better seed.

There were many other striking features at the short course, including a very practical lecture given by G. C. Cunningham of the Federal Department of Agriculture on club root in turnips and cabbage. He gave the results of five years' practical experiments conducted with this disease by himself in the State of Vermont, and concluded his very positive lecture by stating that "he would stake his life that lime stone would cure club root," although he added it might take two or three years before the cure would be complete.

During the short course, the new Science Building which had just been completed, was formally opened by Dr. C. C. James who gave a most practical and helpful talk on that occasion, directing especially his remarks to the delegates of the Womens' Institutes who were present. The following day he held what he called a "council of war" which was attended by some 250 farmers and farmers' sons at the college who listened with the greatest of appreciation to his recruiting agricultural speech. He told them that the problem of 1915 was a simple one in comparison with 1916 when the call for production is just as great, but the means of producing very much reduced.

Space prevents our referring to other striking features of the course such as the lectures and demonstrations on sheep judging and management conducted in horse judging, care and management by Dr. J. A. Sinclair, who is now a member of the staff at the Agricultural College; the fruit packing demonstrations conducted by P. J. Carey, of the Federal Department of Agriculture, the practical instruction in fruit growing given by Saxby Blair of the Kentville Experiment Station, and all this in addition to the instruction given by the well known members of the college staff itself.

The motto selected for the short course was "Greater Efficiency on the Farms and in the Homes of Maritime Canada," and if one could judge anything from the earnest faces and the enthusiastic spirits of those who attended, one could not but feel hopeful that at least to some etxent the greater efficiency in 1916 will be realized.



CLAM SHELL, AFTER CUTTING; ALSO SHOWING SOME OF THE DISCS REMOVED; SHOWING THICKNESS

Feeding Stuffs Definitions.

Meal is the clean, sound, ground product of the entire grain, cereal or seed which it purports to represent: Provided, that the following meals, qualified by their descriptive names, are to be know as, viz.: Corn germ meal is a product of the manufacture of starch, glocuse and other corn products and is the germ layer from which a part of the corn oil has been extracted. Linseed meal is the ground residue after extraction of part of the oil from ground flaxseed.

Cottonseed meal is a product of the cotton seed only, composed principally of the kernel, with such portions of the hull as is necessary in the manufacture of oil, provided that nothing shall be recognized as cottonseed meal that does not conform to the foregoing definition, and that does not contain at least thirtysix (36) per cent of protein. Choice octtonseed meal must be finely ground, not necessarily bolted, perfectly sound and sweet in odor, yellow, free from excess of lint and must contain at least forty-one per cent of protein. Prime cottonseed meal must be finely ground, not necessarily bolted, of sweet odor, reasonably bright in color, yellow, not brown or reddish, free from excess of lint, and must contain at least thirty-eight and six-tenths (38.6) per cent of protein. Good cottonseed meal must be finely ground, not necessarily bolted, of sweet odor, reasonably bright in color and must contain at least thirty-six per cent of protein.

Cold pressed cottonseed is the product resulting from subjecting the whole undecoricated cottonseed to the cold pressure process for the extraction of oil, and includes the entire cottonseed less the oil extracted. When cold pressed cottonseed is ground it shall be designated as "Ground Cold Pressed Cotton Seed."

Cottonseed feed is a mixture of cottonseed meal and cottonseed hulls containing less than thirty-six per cent of protein.

Grits are the hard flinty portions of Indian corn without hulls and germ.

Hominy meal, hominy fed, or hominy chop is a mixture of the bran coating, the germ and a part of the starchy portion of the corn kernel obtained in the manufacture of hominy grits for human consumption.

Corn feed meal is the sifting obtained in the manufacture of cracked corn and table meal made from the whole grain.

Corn bran is the outer coating of the corn kernel.

Corn gluten feed is that portion of commercial shelled corn that remains after the separation of the larger part of the starch and the germ by the processes employed in the manufacture of corn starch and glocuse. It may or may not contain corn solubles.

Corn gluten meal is that part of commercial shelled corn that remains after the separation of the larger part of the starch, the germ and the bran by the processes employed in the manufacture of corn starch or glucose. It may or may not contain corn solubles.

Wheat bran is the coarse outer coatings of the wheat berry obtained in the usual commercial milling process from wheat that has been cleaned and scoured.

Wheat bran with mill run screenings is pure wheat bran plus the screenings which were separated from the wheat used in preparing said bran.

Wheat bran with screenings not exceeding mill run is either wheat bran with the whole mill run of screenings or wheat bran with a portion of the mill run of screenings, provided that such portion is not an inferior portion thereof.

Shorts, or standard middlings are the fine particles of the outer and the inner bran obtained from bran and white middlings.

Shipstuff, or wheat mixed feed is a mixture of the products other than the flour obtained from the milling of the wheat berry.

Wheat white middlings or white middlings is that part of the offal of wheat intermediate between shorts or standard middlings and red dog.

Red dog is a low grade wheat flour containing the finer particles of the bran.

Oat groats are the kernels of the oat berry with the hulls removed.

Oat shorts are the covering of the oat grain lying immediately inside the hull, being a fuzzy material carrying with it considerable portions of the fine floury part of the groat obtained in the milling of rolled oats.

Oat middlings are the floury portion of the groat obtained in the milling of rolled oats.

Oat hulls are the outer chaffy coverins of the oat grain.

Oat clippings are the hairs, oat dust, ends of oats and light oats separated from the oat kernel by the clipping process.

Clipped oat by-product is obtained in the manufacture of clipped oats. It may contain light chaffy material broken from the ends of the hulls, empty hulls, light immature oats and dust. It must not contain an excessive amount of oat hulls.

Rice hulls are the outer chaffy coverings of the rice grain.

Rice bran is the cuticle beneath the hull.

Rice polish is the finely powdered material obtained in polishing the kernel.

Flax plant by-product is that portion of the flax plant remaining after the separation of the seed, the best fibre and a portion of the shives, and consists of flax shives, flax pods, broken and immature flax seeds and the corticle tissue of the stem.

Buckwheat shorts, or buckwheat middlings is that portion of the buckwheat grain immediately inside the hull after separation from the flour. (Mixtures of buckwheat middlings and buckwheat hulls are often sold as buckwheat middlings or buckwheat shorts. Such materials are regarded as misnamed.)

Blood meal is ground dried blood.

Meat scrap and meat meal are the ground residues from animal tissue exclusive of hoof and bone. If they contain any considerable amount of bone they must be designated meat and bone scrap, or meat and bone meal. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Cracklings are the residue after partially extracting the fats and oils from the animal tissue. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Digester tankage is the residue from animal tissue exclusive of hoof and horn, specially prepared for feeding purposes by tanking under live steam, drying under high heat, and

(Continued on Page 266)

HORTICULTURE.

Why we Should Prune and the Different Treatment for Old and Young Trees

(Address by M. B. Davis, Ottawa, before the N. S. F. G. A.)

Our talk on pruning this evening will divide itself into three main divisions, first the pruning and training of the young tree before it reaches bearing age, second the pruning treatment of the bearing tree and, third, the best treatment for many of the older, thick planted, high tree orchards that are so common in parts of the valley today.

Perhaps before plunging into our subject it would be well if we asked ourselves why we prune, for there are those who contend that pruning is an injury rather than a help and on the other hand there are those who go to the other extreme and think that butchering their trees is the only treatment worth while.

We prune primarily to obtain better fruit and in so far as our pruning practices help along that one point, just so far is our pruning a success. We do not, or at least should not, prune to obtain a beautiful or sightly tree. A tree possessing beauty alone does not add dollars to our pockets, so that look at it as you may we prune only to obtain better fruit. If left alone, with plenty of room in which to grow, a tree will, all other things being favorable, produce an abundant quantity of fruit, for nature will see to it that her pruning is sufficient to keep the tree in excellent bearing condition, but what of the quality. The quality will invariably be of a low grade, for nature, when it produced the apple, did not have man in mind, but merely produced the fruit as a means of enclosing the seeds in an attractive little parcel which would nurture and protect them until carried and scattered over the face of the earth by some fruit loving animal. Thus we come to the ultimate conclusion that we prune only to obtain better fruit from our trees.

Now, one word more, there is no operation in your orchard which requires greater care or greater thought and study; there is no operation which in the long run has as much to do with your orchard profits as pruning. I sometimes think that we fruit growers have gone clean mad over spraying and some other operations and in our madness have forgotten the first and fundamental road to success, proper pruning.

Some few years ago I had the privilege of being a partner in an orchard not far from here and had the pleasure of working the place for two seasons. While in that orchard I was unable in that short space of time to change things to my own liking, so can readily recall how, while attempting to spray those trees in an endeavor to get a crop of decent fruit, I cussed the man who planted them so closely, who grew them so high and who made them into such thick trees that spraying was a thing imposisble to properly accomplish. To avoid such trees it is necessary, from the very start, to have in mind our ideal tree and once having made up our minds on that point let us stick to it, for the subject should be given such thought at the start that our ideal, although differing from that of a neighbor in some slight degree, is practically correct and feasible for our own conditions.

The different types of trees that we may grow may be roughly divided into three classes. One is the pyramid form; another is the open centre, and the one that I recommend for your conditions, is a combination of the two. The first or pyramidal form,

(Continued on Page 254.)

Handling Fruit in the City.

The average fruit grower would have been greatly benefitted could he have seen and heard the illustrated address of J. C. Orcutt of the Boston chamber of commerce before the recent annual meeting of the Maine pomological society. He clearly outlined the complex course fruit takes after it reaches the city.

"You must remember apples are harvested in four weeks of the year, but only one-twelfth are consumed. There-

Everybody wants to bake—when the

REGAL FLOUR

barrel is opened.

DU PONT FABRIKOID

MOTOR QUALITY

The Standardized Automobile Upholstery

DU PONT Fabrikoid, Motor Quality, is used on more than half of all 1916 automobiles.

Several years' use on hundreds of thousands of cars has proved its superiority over coated splits, commonly called "genuine leather."

Popular motor car prices are low because every detail of their manufacture is of *standard guaranteed* quality and cost.

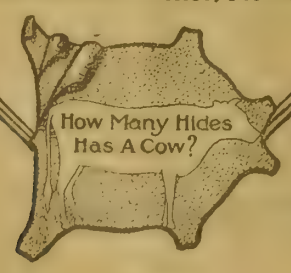
Coated splits, weak and irregular in quality, durability and price, cannot be standardized.

Motor Quality Fabrikoid, uniform in quality, price, durability and handling costs, *is* standardized.

Insist upon Fabrikoid upholstery. Buy a standardized car and get the most for your money.

Send for samples and booklet No.

DU PONT FABRIKOID COMPANY
Wilmington, Delaware
Factory at Newburgh, N. Y.
Canadian Sales Office, Toronto



Seeds with a Pedigree mean Money-making Crops

THE first step to intensive farming is to use only *tested seeds* of the best quality, and of varieties especially bred for Canadian climatic conditions. No amount of care in cultivation will produce big yields from inferior seeds. *It is now forty years since*

McDonald's TESTED SEEDS TRUE-VIGOROUS-RELIABLE

were first supplied to Canadian farmers and gardeners. For nearly half a century, season after season, they have been producing money-making crops for those who use them. They have an honest reputation for strong, vigorous germination, and for producing hardy, healthy plants. McDONALD'S Tested Seeds are of strong, pedigreed strains, especially selected for Canadian climatic conditions, and are subjected to rigid tests before being approved for sale.

Get bigger yields per acre by using McDONALD'S Tested Seeds

Hundreds of varieties of field, garden and flower seeds illustrated and described in McDONALD'S Seed Annual. 100 pages, full of valuable information for the farmer or gardner. Write now for your copy, it is free.

KENNETH McDONALD & SONS, Limited
46 Market Square (2) OTTAWA

Eureka

Catalog sent free

Potato Planter

The Eureka line of Potato Planters is the largest manufactured. This machine takes only *one* man to operate it. That means less trouble and expense for *you*.

Opens the furrow—drops the seed any distance or depth required—puts on fertilizer (if desired)—covers up—marks for next row. Always accurate and automatic.

It's an easy machine to operate. The steel and malleable iron construction mean lightest possible weight and increased life of machine. Your repair bill will be practically nothing. Plants uniform depth at *all* times because plow is directly under the axle. Dropping mechanism in plain view of driver. Does not injure seed.

We supply planters in three sizes, for one or two rows—with or without Fertilizer Attachment.

For 16 years the Eureka Potato Planter has been successfully used throughout the world.

We also make Eureka Potato Cutters and the Eureka Mulcher and Seeder—a mulcher, smoothing harrow, cultivator, weeder, seeder.

Write to-day. Sold by

FROST & WOOD CO., Ltd., St. John, N. B.

Eureka Mower Co.
Box 745
Utica, N. Y.

GILSON

POWER plus SERVICE

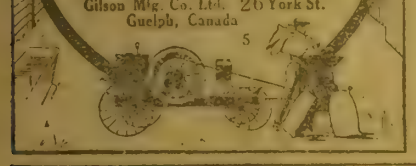
After 9 years of Service

Mr. H. [illegible], of Brantford, Ont., writes:

Gentlemen:—[illegible]

Write for FREE catalog and prices.

Gilson Mfg. Co. Ltd. 26 York St. Guelph, Canada



FREDERICTON BUSINESS COLLEGE

Will re-open for the

WINTER TERM

on Tuesday, Jan. 4, 1906

Booklet giving full particulars of our courses of study furnished on application. Address

W. J. OSBORNE
PRINCIPAL
FREDERICTON, N. B.

Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?

He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
St. John, N. B.

for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals

Advertise in The Maritime Farmer and get Results.

fore, they must be stored. The average fruit grower does not appreciate the changed conditions in city life. Consumers buy from day to day, and at most from week to week. You cannot sell them an article when they do not want it, any more than you can in a form they do not desire. Probably 80% of the fruit is retailed to working people who buy both cooking and eating apples. They will order a peck or so at a time for cooking and seldom more than a dozen for eating. This is a retail trade and the consumer is supplied at any time and with any quantity by the corner grocery store.

"In greater Boston alone there are upward of 700 chain stores, some of which have as many as 100 stores in a chain. These corner stores carry only a few barrels and are supplied regularly from headquarters by auto truck. They have no facilities for storage and this answers the question of many farmers why they cannot sell direct to the grocery store. City people are not so much interested in the food supply as the farmer thinks. The service is what counts with them and it is impossible for the farmer to begin to compete with the wholesaler in service.

"The fact remains that the bulk of the crop must be sold by a middleman, whether you call him a wholesaler or jobber. You must also remember these people are not doing business for their health. They are going to make their profit whether your produce brings 10 cents or $10. Too many farmers ship in a few barrels of apples and think the commisison man has nothing else to do but hustle around the city and place this consignment. The chances are there are 500 other shipments to be looked after, so it is impossible for any one grower to be singled out for extra profits. Matters are still worse when a grower ships in goods of uncertain quality. For example, if Farmer Jones sends in 25 barrels apples and they are sold by the commission man to Henry Smith's restaurant, there will be trouble if fruit is not what it appeared to be. The commission man must make good with Smith for the does not wish to lose his trade."

Mr. Orcutt made it clear that the average retailer does not wish to buy direct from the farmer. This is for three reasons: The farmer may send too few or too many, credit is not extended and the service does not begin to equal what the middlemen can supply. The illustrations backed by the address of Mr. Orcutt doubly emphasized how complex city distribution of so simple a product as fruit has become. Consumers and retailers have reached the acme of service, but farmers and city people alike pay a heavy toll.

Pruning Orchard Treee.

This work is in order now whenever there is time. Everybody who attempts to prune trees should know enough about them to do the work in a scientific manner. Do not permit them to be butchered or pruned with an axe; use a sharp saw or pruning shears ever time. Before starting to prune a tree, stand back and look the tree over to see what you wish to do with it. It is always best to cut out the dead wood before cutting anything else, because it is then out of the way, and one can better see what green wood should then be cut off. When pruning the orchard, where two limbs are found crossing each other so closely that they rub each other, the weakest or least desirable one ought to be removed. The top needs to be sufficiently open to let the sunlight in to the top; this is necessary so that the fruit may be properly colored up, and the flavor is also much improved by the sunlight.

BABY'S OWN SOAP

For Baby's Bath

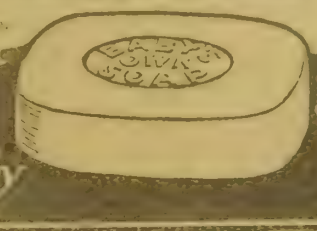
The creamy softening lather of Baby's Own Soap and the fragrance of its delicate aroma leave the skin cleansed—refreshed—aromatized

Four generations of Canadian mothers have used and recommended it.

In the Interest of your children's skin insist on Baby's Own Soap

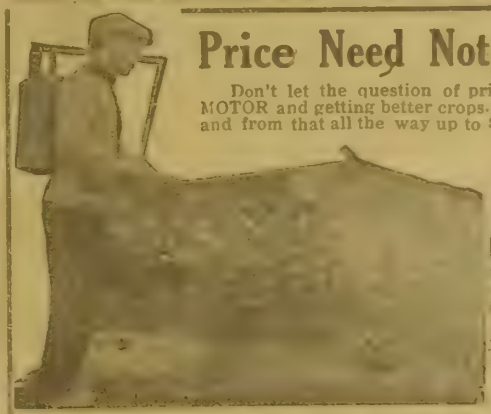
Albert Soaps, Limited, Mfrs., Montreal

Sold everywhere.



Best for Baby

Best for You



Price Need Not Stand in the Way

Don't let the question of price prevent you from owning a SPRAMOTOR and getting better crops. We make a SPRAMOTOR as low as $6, and from that all the way up to $400. Our $6 outfit is as good value in proportion as the $400 machine. There's a

Spramotor

It isn't a SPRAMOTOR unless we made it

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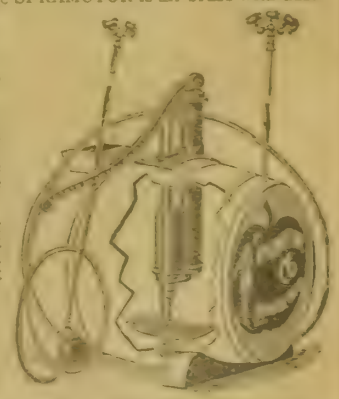

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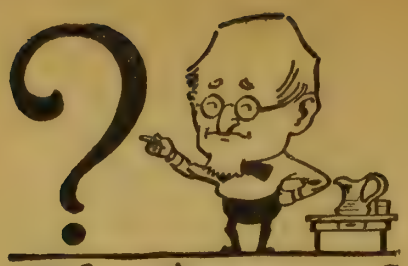
In pruning and directing the growth of my earlier set orchard, I trained it low—too low, I now find. True, the wind does not blow off the apples so bad when the limbs are low, but the fruit does not color up so richly or have so nice a flavor as when grown higher up, in the sunshine.

I have a younger orchard, in which I do not intend to let the limbs grow quite so low down; however, I do not wish to be understood as advocating "high up" trees. There is a [illegible] be the most desirable system of training apple trees.—F. H. Dow.



DAIRYING.

Judging the Breeding Powers of an Animal.

In the October 1st issue of Hoard's Dairyman discussion was invited on the probability of a bull calf out of a high producing cow, and sired by a bull out of a high producer, being capable of siring high producing heifers, even though heifers out of his dam by bulls other than his sire were poor producers.

The question has been summed up well in a previous note wihch said that the "productive powers" of the bull in question depended largely on the nicking of his sire and dam. In addition his power of siring high producing heifers also depends on his nicking with the females to which he is bred.

This question of nicking is of great importance, especially amongst Jersey cattle. There are Jerseys of related blood lines which, when bred together, will give excellent results so far as the productive powers of their progeny are concerned, but when these blood lines are bred with certain others the results are, as a rule, disappointing. Blood lines which nick are said to be "warm" to each other and those that do not nick are called "cold."

The two poor half-sisters of the young bull in question do not give much indication as to what his productive powers will be, if, as we said before, his sire and da mnick, and the bull is mated with "warm" blood.

The following table from N. W. Harper shows the chances there are of having good producers as a result of mating good producers—by a good producing bull is meant one that has the inherent capacity of begetting daughters that will give high milk and butterfat yields.

This shows that a bull with either sire or dam in the A. R. O. is much more likely to beget A. R. O. daughters than is one with a sire and dam incapable of meeting A. R. O. requirements. Again, bulls with both sire and dam of A. R. O. calibre are, as a rule, better sires of producers than are bulls with only one parent of great producing ability.

To sum up it may be said that if producers nick they are more apt to beget producers than are nonproducers, but it is very difficult to say definitely that any two animals nick. The only way to tell if two animals will nick by by breeding them, though animals of similar breeding are, as a rule more liable to nick than those that are not.

The advice given in a former issue —to watch the development of the heifers sired by the bull—under discussion is good. Too much emphasis should not be placed upon a comparatively few heifers as they do not afford an absolute guide. It is only when the numbers approach a considerable sum that the evidence may be regarded as conclusive.—L. S. Gillette, in Hoard's Dairyman.

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Table Showing the Breeding of All Holstein-Friesian Bulls With Four or More Daughters in the A. R. O. This Includes 1191 Bulls Admitted up to May 15th, 1912.

Character of Mating	No.	Per cent.	Per cent of total.
I. Sires with 4-41 A. R. O. daughters	948		79.6
A—Both sire and dam in register	482	50.6	
B—Neither sire nor dam in register	192	20.2	
C—Sire in register, dam not	191	20.2	
D—Dam in register, sire not	83	8.8	
II. Sires with 15-24 A. R. O. daughters	155		13.1
A—Both sire and dam in register	118	76.1	
B—Neither sire nor dam in register	4	2.6	
C—Sire in register, dam not	16	10.3	
D—Dam in register, sire not	17	11.0	
111. Sires with 25-49 A.R.O. daughters	65		5.4
A—Both sire and dam in register	47	72.3	
B—Neither sire nor dam in register	0	0	
C—Sire in register, dam not	8	12.3	
D—Dam in register, sire not	10	15.4	
IV. Sires with 50-74 A.R.O. daughters	13		1.1
A—Both sire and dam in register	10	77.0	
B—Neither sire nor dam in register	0	0	
C—Sire in register, dam not	1	7.7	
D—Dam in register, sire not	2	15.3	
V. Sires with 75 or more A.R.O. daughters	10		.8
A—Both sire and dam in register	10	100.0	
B—Neither sire nor dam in register	0	0	
C—Sire in register, dam not	0	0	
D—Dam in register, sire not	0	0	

Pastevrizing Milk in Bottles.

In an effort to insure more somplete efficiency in pasteurizing milk, considerable agitation has recently been had with reference to heating the milk in the bottles rather than pasteurizing in bulk and filling bottles after cooling. Prof. Baer of the Wisconsin Experimental Station has made a series of observations, checking the cream line, cooked flavor, and germ content.

With the temperature of the water in the vat at 140 degrees to 150 degrees F. and held for 20 minutes, unsatisfactory bacterial counts were obtained. When, however, the temperature and time of holding of the milk was controlled by a thermometer inverted in a bottle, very satisfatcory bacterial reductions were obtained, even when holding only 20 minutes.

Temperatures of 155 degrees to 165 degrees (water vat) gave better reults bacterially, but the separation of the cream line was much affected at these temperatures, and a cooked flavor noted.

In the studies on bottle pasteurization it was found that unless precautions were taken there was danger of wtaer entering the bottles when they were cooled after pasteurization, due to the formation of a partial vaccuum in the bottle as the milk contracted on cooling. Results of such tests made on unselected bottles showed that leakage occurred with a very large percentage (44 per cent). The leakage will depend on the amount of force applied to the foot lever of the bottle capper, when this type of machine is used, and especially on the condition of the top of the bottle. Water will invariably be drawn into a bottle during the cooling process if it is chipped at the head.—Wisconsin Bulletin 250.

When Butter Won't Gather.

It is sometimes hard to say why butter does not gather properly. We doubt if the fact that the cream is a product of two different breeds of cows has anything to do with it. The trouble more likely lies in methods of handling cream.

Temperature is a big factor in the proper churning and gathering of butter. Generally speaking, the temperature at churning times should range from 58 to 62 degrees. It will pay to buy a dairy thermometer in order to know the temperature of the cream.

There are a good many other factors influencing this point, such as ripening of the cream, the temperature while it is being held and the proper stirring and mixing. Sometimes when there is a small quantity of whey and white particles at the bottom of the cream can, churning is not so satisfactory.

In Examining Udder Look for Length Rather Than Depth.

has been made in increasing the milk production of dual-purpose Shorthorns, the views of the breeders concerning the most desirable shape of udder seem to have undergone a decided change during the past few years. Previously, cows swinging large, pendulous udders somewhat after the Dutch breed frequently gained in favor with judges. Nowadays, however, an udder apparently smaller but more squarely built is first choice. Indeed the breeders in England have of late exhibited a preference for the udder that is designed most closely after the Ayrshire pattern. This is to say that now the udder best liked has length rather than depth, reaches well forward under the flank, and is at nearly level on the underline as it can be.

This shape of udder permits of the teats being placed well apart fore and aft as well as sideways, thus giving better capacity to each of the four

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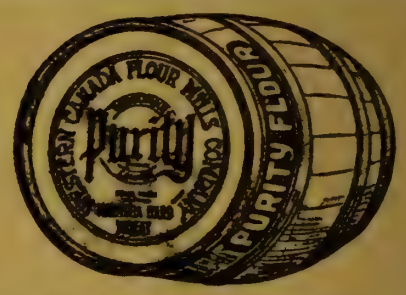

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quarters into which it is divided by nature. The claim is also made that with an udder of this shape and character a cow can carry a larger yield of milk with greater comfort than if her milk-producing apparatus is bulky and hangs low to the ground.

All the photos of the more recent great young prize winning dual-purpose Shorthorns show them to be furnished with udders very distinctly of the Ayrshire stamp. It is a reasonable enough preference at that, from the standpoint of attractive appearance as well as productive ability.—American Shorthorn Breeders' Association.

Healthier Cows are Direct Results of Thorough Cleaning.

We never knew our cows to do better than after we began to use the curry comb and brush on them as soon as they came into the stable for winter. My father used to keep his cows as sleek as moles. We never had a horse on the farm when I was a boy, but no horse could have had better attention along this line than did the cows and oxen. Seems to me I can see them now, their backs, sides and limbs smooth and gistening from the grooming father had given them.

For a time I did not think so much of this after I had a farm of my own. I was busy fixing up the house and barns and did not have much time anyway to devote to the fine points of dairying, but the time came when I gave this more attention, and I know it pays to keep cattle clean. Every morning I began to give the cows a thorough combing. If we begin at the very outset of the stabling it is not very difficult to keep the cattle free from accumulations of filth which will otherwise cling fast to the sides and flanks. In memory I recall the appearance of my cows as they came from the barn in spring under the old custom. It is no exaggeration to say that some of the cows had loads of manure an inch deep on their flanks, dry, hard and uncomfortable, I have no doubt, to the animal thus encumbered. I am ashamed of it, and still, I was doing things just as my neighbors did, and as many still do.

Now, what does it do for stock to keep them clean? Just this: It makes them healthier and enables them to do better for themselves, which means better for their masters. And this is how: It keeps the pores of the skin open all over the body, and helps to carry away the waste which would otherwise have to be removed in some other way or be dammed up in the animal's carcass. The better the cow's bodily organs do their work the healthier the animal is and that increases the appetite and makes the assimilation better. Anything which makes the cow hearty and thrifty adds to her power to eat food and turn it into flesh, milk and butter fat.

It does not take much time to give the cows this attention if we have begun at the beginning of stabling and keep it up regularly. Only when we skip a few days does the matter become more laborious.

In doing this work I have learned that there is a difference in cows about the matter. Some cows will stop eating and act as if they greatly enjoyed the cleaning up. Others are very sensitive to the touch of the brush, so that we must be careful or they will feel nervous and distressed, perhaps getting more harm than good. A man soon learns about this and ought to be careful to adapt his vim and vigor to the peculiarities of the different cows.

Then, too, cows do not need as much feed if their bodily powers are in good working order. That may seem rather strange to one who has not looked into the subject, but it can easily be proven. In fact, it has been proven. I have done it myself to my decided satisfaction.—J. C. in O. V. Journal.

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LIVE STOCK.

Results of Continuous Injections of Tuberculin upon Tubercular Cattle.

The veterinary department of the Pullman Agricultural Experiment Station, Washington, carried out a series of experiments to study the effects of subcutaneous injections of tuberculin into cattle in the conditions under which they are generally kept; that is: a fairly well-kept stable in the winter time, being out of doors a part of the day time; and a run to pasture during the summer months, being kept in the barnyard at night.

The first series of experiments were carried out during the year 1900, and the second during 1903-02.

The chief results obtained were the following:

1. The injection into tubercular cattle of large monthly or small weekly doses of tuberculin is apparently without any therapeutic value.

The monthly injections were given as follows: one cow received the first injection of 4 cc. January 14, 1904 and last of 8 cc. Fbruary 13; another cow received her first injection of 44 cc. on January 14, 1904. At each successive injection the dose was doubled till the last reached 2048 cc. on November 25, 1904.

2. The injection of continually increased daily or weekly doses of tuberculin apparently does have a therapeutic value.

The weekly doses began with a 2 cc. and increased every week by 1 cc. With one cow the last dose was 16 cc.; with another 150 cc.

The daily injections were preceded by a weekly injection 2 cc. The period between each succeeding injection was then curtailed by one day until it became daily. On every subsequent day the dose was then increased by 0.5 cc.

3. In tubercular cows the evening temperature is usually higher than the morning temperature.

4. The more often tuberculin injections are made into tubercular cattle, the sooner the temperature begins and the sooner the maximum is reached.

Averaged Sized Sows are the Best Breeders.

"It is not a day too early now to select the prospective brood sows for next season," says W. J. Carmichael of the University of Inninois. "Some day when you can take the time, get the gilts together, decide how many you will want for the breeding herd and sort them out, taking great care to get only those which have good quality, plenty of stretch, long, strong back, good feet that stand up well on the toes with the toes together and with as much uniformity as possible. In making these selections don't lose sight of the pigs from those sows which are regularly good producers, and on the other hand do not forget to discard the pigs of sows or strains which have shown themselves to be unprofitable. Of course succeeding generations do not always perform in a manner identical or even similar to the preceding, but as a general rule there is a tendency towards a resemblance of record performances.

"Another place where many make a mistake in the selection of breeding stock is in choosing those animals which possess the most size regardless of quality or conformation. It is frequently the case that the larger ones are the most profitable, but year in and year out they are not as profitable in the production of market hogs as are the average-sized sows. The average-size sows may not farrow quite as many pigs per litter as those above the average in weight, but they will save a larger per cent. of pigs farrowed, and the offspring will almost invariably be more uniform."

Work and Exercise for the Bull.

Bulls are powerfully built. Under natural conditions they used their great strength in the fields, grazing, fighting and defending the herd. If tihs great strength is not put to use, it is little wonder that bulls become sullen, or nervous, or phlegmatic, and fail to be sure breeders after two or three years' confinement in a bull pen, writes J. A. McLean in the "Breeders' Gazette."

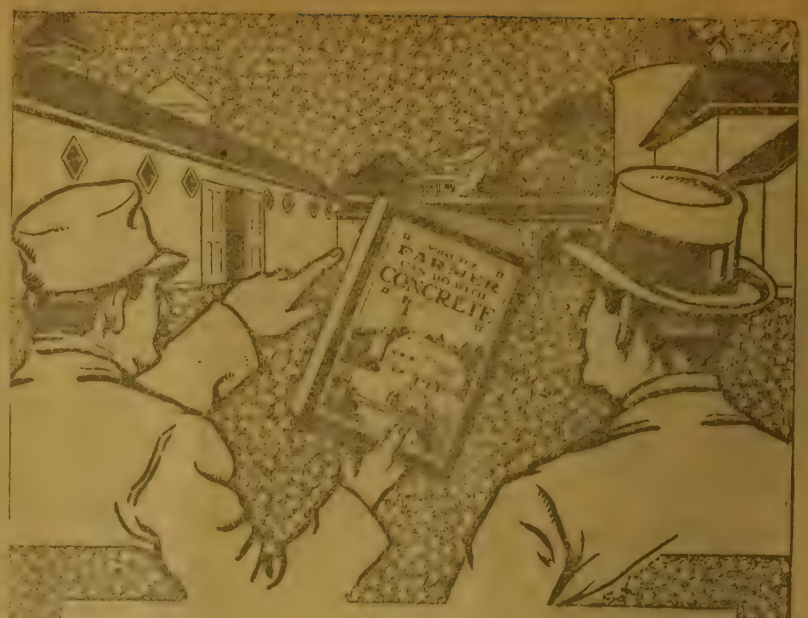
At the Massachusetts Agricultural College we have been working our bulls regularly during the last two years. We have worked a son of King of the May yoked with a son of Interested Prince to the advantage of both of those royal families. Yoked in front of a pair of oxen they have pulled the double-dics harrow, and plowed, and have done their turn at all phases of farm work. Our Holstein and Ayrshire bulls, which are older, have plowed from an acre to an acre and a half daily. They are excellent at hauling manure. We prefer them to horses for work on rough land. One man readily handles either two or four. They get plenty of exercise, which has kept them in fine condition. They have done useful work economically; they are all sure breeders; they are gentle and safe and easy to handle, and we have not yet had to construct large expensively fenced bull paddocks, which at their best are not entirely serviceable. These bulls were broken to the yoke before they were two years old, and gave very little trouble in schooling. If they are allowed a period of idleness they become rather restive and display a desire to be out and at work. Surely there is a merit in the earlier practice of working bulls in the yoke which is worth consideration and emulation.

It may be added that this practice is adopted in various parts of the European Continent. In Sweden the bull is housed in a box in the large shed in which the cattle are kept, and he is said to be much more tractable than the animal kept shut up alone; he is put to useful work, and at agricultural shows is ridden into the ring.

Tapeworm Seldom Cause of Lamb Losses.

The common tapeworm of lambs is one that has a habit of getting into the duct leading from the liver, and for this reason many who have examined sheep, dead of disease, have suspected the tapeworm of causing the death. It might be well to state that more than 60 per cent of all Western lambs have these tapeworms, as is evidenced by finding them on the killing floors at the large packing houses. While it must be admitted that in a few instances they may cause some trouble, yet it is not believed that they are responsible for many of our lamb losses.

During the siege of the Kansas horse disease, some man unfamiliar with the normal condition in horses, for the first time found Palisade worms in the abdominal arteries of dead horses. He at once jumped at



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Signs of worms are: Deranged stomach, swollen upper lip,) sour stomach, offensive breath, hard and full belly with occasional grippings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on the tongue; starting during sleep, slow fever.

Dr. True's Elixer, the Family Laxative and Worm Expeller, will surely and quickly expel worms. Good for adults also. At dealers, 35c, 50c and $1.00. Advice free. Special treatmetn for tapeworms. Send for bo k.

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the conclusion that these worms were responsible for the disease. Had he known that approximately ninety-five per cent of all horses have these same worms, his reputation might not have suffered.

It is rather common for veterinarians to diagnose tapeworms in dogs, and in about 95 per cent of these diagnoses are correct, but that the tapeworms in these animals are responsible for disease is not at all evident, except in a very small percentage of cases. So it is with these tapeworms in lambs. They can always be found in posting any large number of animals, but that they are responsible for any serious disease is evident only in a few cases.—I. E. Newsom, Colorado Agricultural College, Fort Collins, Colorado.

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Sterility in Cows.

Cystic degeneration of the ovaries is one of the commonest causes of sterility (failure to breed) in cattle. No cure for it has been discovered up to this time, except a form of surgical interference, which has been reported from Switzerland as successful in a percentage of cases when applied by a skilled veterinarian. This is, however, not a practical treatment for the ordinary farmer. According to the teachings of extensive statistics, cystic degeneration occurs most frequently in highly bred, early maturing, valuable breeding and milch cows of from five to eight years of age, and in well-kept heifers of one and a half to three years. However, ovarian cysts in young calves and in aged animals are not at all rare. In regions with very intensively forced cattle breeding and dairying, where large quantities of artificial foods are employed, and where pedigreed breeding animals are overfed, especially on rye, distillers' grains and malt, and in addition are constantly stabled, the disease is indiginous, while in animals more naturally and moderately fed and kept much at pasture, the disease is far more rare.

Cross-Breeding Dairy Cows.

Several years ago some milk producers, against advice from various quarters, started in to cross-breed dairy cows, say the "New York Farmer." With most of them the aim was to produce "cows able to give Holstein quantity with Jersey quality." Their idea of "quality" was confined to the butter-fat percentage in the milk. Reports of their work are coming in now. The results are exactly what any well-informed breeder would expect. The crosses are mongrels. The cows are larger than Jerseys but smaller than Holstein-Friesians. Some of them give a little more milk than the Jerseys in their ancestral lines, but none of them give so much milk as their Holstein-Friesian ancestors gave. Some of them put a little more butter-fat into their small yield of milk than their Holstein-Friesian ancestors put into their larger yield, and none of them equal their Jersey ancestors in butter-fat percentage. In short, these cases of cross-breeding pure-bred animals have resulted in the production of animals that are failures. They are worthless at the pail. They are dubious as breeders. They combine more of the defects and the weaknesses of their ancestors than they show of their merits and their best traits. The moral is that cross-breeding is a mistake for the farmer. No breed of cows is likely to be produced that will "combine all the merits of all the milk breeds." The crossing of breeds is the work of experts, of scientists, of students, not the work of average practical farmers on average farms. Each dairy breed is a distinct entity with peculiar merits. Crossing one breed with another simply breaks down a definite union and sets its elements free to form new combinations, and in the nature of things the new combinations cannot be superior to the old combinations. Farmers cannot hope to accomplish great or even good things by throwing pure-bred cattle, horses, sheep, swine and poultry over into mongrelism.

Don't use Broomstick if Animal Chokes.

Of all animals on the farm, cattle are perhaps the most liable to become choked. Choking is most liable to result from attempting to swallow without mastication, carrots, turnips, potatoes, apples or sugar beets. Cattle frequently choke from chewing leather, boot heels, old rags, and all sorts of unseemly things which could not be digested if swallowed, and indicates a depraved appetite.

In such cases if the services of a veterinarian can not be secured the owner will have to do the best he can alone and the things that are usually done first should not be done at all. Attempting to pour water down the throat usually results in most of it going into the lungs and the result is death of the animal, that might otherwise have been saved.

A case of turnip choke came under observation recently. A sharp pointed broomstick was thrust down into the throat in an effort to push the turnip downward and the animal died from the injury. Less heroic efforts will usually relieve the animal. Whatever is attempted to relieve the suffering animal do not try the drench or the broom-handle.—H. S. Eakins, Colorado Agricultural College, Fort Collins, Colorado.

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Dr. Chase's Ointment Cured When Baby's Body Was Covered With Distressing Eczema.

If every mother could try Dr. Chase's Ointment for the chafing, skin irritation and resulting eczema which tortures so many babies, what a blessing it would be for the little ones.

This letter will give you an idea of what a wonderful work this Ointment is doing in the way of bringing comfort to children who are so unfortunate as to contract eczema. It is so easy for this trouble to develop from clothing, and so difficult to get it cured, that Dr. Chase's Ointment is

Mr. M. L. Duclos, Postmaster, Dugnayville, N. B., writes: "I believe it is my duty to recommend Dr. Chase's Ointment as a cure for eczema. My baby was seized with eczema and his terrible disease. After trying all sorts of ointments the disease continued to spread until it covered the entire body. When the itching became bad h and was so dle covered about Dr. C two boxes an the child wa ago, and the eczema sinc Chase's Oi from eczema diseases."

Dr. Chase'

with the ba roughness o tation. Pre than cure. but Dr. Ch soft and smo you mention Bates & Co.,

THE HORSE

The Poorly-Fed Colt at the Shows.

One of the most important facts being brought out at the colt shows is that the majority of colts are not properly fed. In order to obtain the full hereditary possibilities of the colt it must be liberally fed and kept under suitable conditions. I have come to this conclusion after raising colts of my own, judging more than 1,000 horses and colts in the showrings of 1913 and 1914 and studying live stock conditions on several hundred farms in Iowa, Illinois and Indiana.

The horse show affords an excellent opoprtunity for study and comparison. The sucking foal classes are in most cases the largest in numbers, ranging all the way from 10 to 12 to more than 30 in a single class. These spring foals are lined up in the showring usually before they are weaned or at about weaning time. Nearly all of them are still in excellent growing condition and in large classes many of them look as nearly alike to the ringside observer as peas in a pod. One not acquainted with conditions would naturally believe that since the suckling foal classes contain such large numbers the yearling classes of the year following would be nearly as large. Such is seldom the case. Often only about one-third, or even less, of the foals shown in the suckling classes are in condition to show as yearlings. At shows where the entries run up to 150 horses and colts it is common to find only from 1 to 5 or 6 colts in the two-year-old draft classes. And in the three-year-old classes the well fed and well kept imported colt generally lands the money. Too many of the yearlings and two-year-old colts are not fully developed for their age because of underfeeding. Their owners know for that reason that they cannot compete in the showring with the colt that has been properly fed. Imported horses are liberally fed and well cared for and they have reached the greatest growth possible for their age. If that were not the case importers would not buy them.

Before weaning foals are usually well nourished by their mothers' milk and some grain and hay or pasture grass. Soon after weaning time fall work begins to crowd the owner and the foal is neglected. My experience in feeding colts for many years on the farm and at experiment stations has convinced me that they must receive grain while they are on pasture in order to develop best. Equal parts of corn and oats make an excellent feed for colts on pasture. Colts of the same size and age may be fed collectively in a long feedbunk such as has been used for feeding cattle during the winter. For winter feeding the following ration will keep them thrifty: 50 per cent corn, 40 per cent oats, 10 per cent bran and equal parts of corn silage, free from mold, and good clover hay or alfalfa hay.

The colts' feet should receive attention. This is important and can seldom be overlooked with impunity in the showring. The expert horse buyer who buys horses for the city market or for shipment to Europe loses no time in turning down one with crooked feet, although the animal may be acceptable in other respects. Colts should have their feet examined every six weeks. While the colt is on pasture the feet often do not wear off sufficiently; the horny portion of the hoof becomes too long, then finally breaks off on one side and throws the slope of the roof out of line with the natural slope of the pastern. A pair of sharp pincers, a rasp and a farrier's knife should be kept on hand to trim colt's feet whenever they need it.

With the same breeding, feeding and care, the American-bred colt will not always be out-classes by the imported colt. This fact is being demonstrated to our satisfaction more and more each year at the large horse shows and state fairs. Just at present the average horse has a very poor market. First-class horses that are of proper size and conformation with plenty of vigor and endurance are in demand. Such horses can be raised by careful attention to good breeding, feeding and care. It always pays to keep the colt growing, for as the colt is so the horse will be.—J. W. Schwab, Indiana Experiment Station.

Wintering Stallions.

Almost every veterinarian who practices in a horseraising region is called upon to assist in getting stallions in fit condition for service in the spring, and most of them know from experience what a difficult job it is. It is the first duty of a veterinarian to prevent disease in animals, and there is no one place where proper care and attention are more useful than in preventing conditions that seriously interfere with the usefulness of draft stallions. The average stallion is neglected through the winter. He forgets what a curry comb and brush look like. He is frequently kept in a shed or given the run of a small paddock that does not permit sufficient exercise. The manure is seldom removed, and as a result many stallions suffer from grease heel or scratches, deformed hoofs, thrush and other conditions that should be prevented. A stallion should have pletny of exercise, clean dry quarters, and, above all, his feet and legs should be given as frequent and careful attention during the winter as they receive in the busy season. During the winter, unless a stallion is working, the hoofs do not wear off as they should; they become too long and are easily broken on irregular, frozen ground, so that it is a practical impossibility to restore them to their proper shape until they grow out.

When stallions are neglected during the winter the owners do not as a rule begin to fit them for spring service soon enough, and in the majority of cases the stallions are not in proper condition to ebgin the season. Unless a stallion is in the best of physical condition to begin the season. Unless on, satisfactory results can not be expected. It is difficult and expensive to try to fit a stallion after the season has opened. The stallion should be in condition all the time, not too fat, his feet and legs should be given careful attention during the winter, when he will need little fitting for the breeding season.—N. S. Mayo, D.V.S., Cook Co., Ill.

The Sires of Winning Clydesdales.

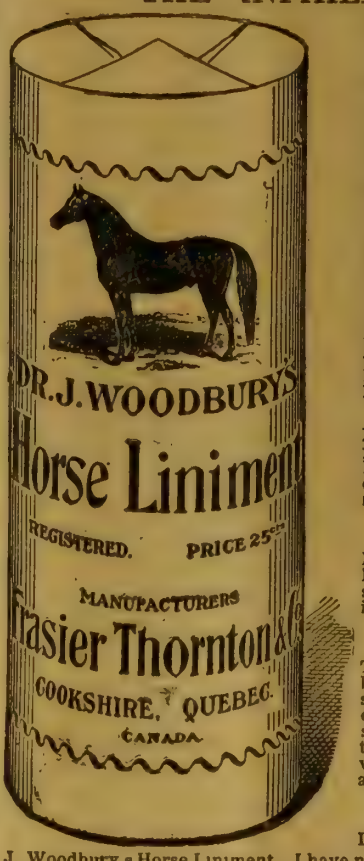
Archibald MacNeilage, secretary of the Clydesdale Horse Society of the United Kingdom of Great Britain and Ireland, has once more compiled his statement on the Clydesdale trade for the year in Scotland. It contains some remarkable facts. But it is only fair to state with as great emphasis as possible that if the Clydesdale has attained to a high rank among the draft horses of the world much of this success must be attributed to the marked attention given to the registration business. Mr. MacNeilage's is a master hand at work of the kind, and no society can excel the Clydesdale in accuracy of detail and immunity from error so far as the records are concerned.

Mr. MacNeilage in passing mentions that three well-known stallions have died during the year—Hiawatha, Sir Hugo and Silver Cup. It is observed that Hiawatha was the opposite of the old style of horse whose merits were summed up in the phrase, "He was a big ane lying doun." A greater contrast could hardly be imagined, according to Mr. MacNeilage, than between the type of Druid, the champion of the Royal Agricultural Society's show at Kilburn in 1879, and Hiawatha, the champion of the Highland and Agricultural Society at Edinburgh in 1899. Yet no one can deny that the Hiawatha type, when matured, is by far the best and most valuable. Animals of this class require time to mature, but when this is accomplished they can be depended upon to last a while.

The show tables are this year curtailed. Two of the most important shows were not held—those of the Giasgow Agricultural Society and of the Highland and Agricultural Society. This of necessity narrows the basis on which Mr. MacNeilage's figures rest, but he does not think that the features of the tables of winning sires would have been seriously altered had they taken place. This year for the first time the show of the Royal Northern Agricultural Society at Aber-

Dr. J. Woodbury's Horse Liniment

THE INFAILLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured. Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

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This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
Newton Lee, Owner "All Right" 5817.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.
Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.
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As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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DOG DISEASES
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deen has been taken into account. The feature of the table undoubtedly is the surprising success of Dunure Footprint as a sire. The results in his case overshadow all the rest, and place him an easy first among Clydesdale sires of today.

In all there were exhibited at the leading shows 34 animals whose sire was Dunure Footprint, and they secured no less than 72 prizes, of which 18 were firsts, 16 seconds and 8 were thirds. Championships were gained by four of his get—the two-year-old colt Kismet, the two-year-old filly Rosalind, Balcairn Primrose and Black Print. All but the first were junior championships.

The sire of Dunure Footprint, the famous Baron o' Buchlyvie, comes second on the list with a very good record of 37 prizes won by 21 animals. Eleven of these prizes were firsts, 10 were seconds, and 7 were thirds. Two championships were also secured—by Dunure Kaleidoscope, a splendid two-year-old colt at the Royal, and by the mare Dunure Chosen, full-sister to Dunure Footprint at Kilmarnock.

Apukwa, owned by James Gray, Birkenwood, Gargunnock, comes third. He has the same total as Baron o' Buchlyvie, but his exhibits only numbered 11, and they had among them 7 firsts, 6 seconds, and 7 thirds. The phenomenal feature of Apukwa's record is his championships. The produce of this horse won all the greatest trophies. Drumcross Radient, a three-year-old colt, won both the Cawdor cup and the Brydon shield at the Scottish Stallion Show. Lady Betty, a great three-year-old filly by him, gained the Cawdor cup for females at the Edinburgh show, the female championship at the Royal, and the President's medal at Edinbugrh; the two-year-old colt Dunure Birkenwood won the male championship at Kilmarnock. This record for championships was probably never equaled.

Bonnie Buchlyvie, the horse for which James Kilpatrick, Craigie Mains, Kilmarnock, gave $26,250 at the Seaham Harbor sale, stands fourth with a total of 16 prizes won by 8 animals.

Baron's Pride is fifth with a record of 13 prizes won by 7 animals, 2 of them being champions. Next in order comes Everlasting with 8 prizes; Hiawatha, Revelanta, and Royal Favorite with 7 prizes each; Signet with 6 prizes; Perfect Motion with 5 prizes; Scotland Yet and Montrave Mac with 4 prizes each; Dunure Index with 3 prizes; Pride of Blacon, Prince Ossian, Boquhan Chief, Oyama, Sir Rudolph, Auchenflower, Sir Dighton, Baron's Fashion, Sir Hugo, and High Degree with 2 prizes each.

Mr. MacNeilage's tables serve an excellent purpose in arousing an interest in the doings of leading horses of the country. The greatest importance is attached to them wherever Clydesdals are bred.—Alexander Mowat, Scotland, in Breeders' Gazette.

Treating Wounds in Horses.

Some of the things to bear in mind when the horses are injured on barb wire are pointed out by Dr. A. S. Alexander of the university of Wisconsin. "After a barb wire accident, do not apply axle grease or any rancid ointment to the wound,' 'says Dr. Alexander. "Wash the wound thoroughly with warm water. Then clip the hair as closely as possible around it, and wash again to remove any hair or other foreign substance. When sand or hair has lodged in the depths of a deep cut, never use a wet sponge to clean it out. Use a piece of absorbent cotton or cotton batting. There will be much less risk of infection.

"It will be useless to put stitches in a wound that is very deep or ragged, or that is located in a place not in perfect rest when the animal is making natural movements. Dry dusting powder has a healing effect on barb cuts and abrasions. Such a powder may be prepared cheaply by mixing together equal parts of slaked lime, sulphur and charcoal.

"Prevent lockjaw danger in nail wounds of the hoof by opening them up freely, which provides drainage for serum and pus. Saturate with a solution of corrosive sublimate, and water in the proportion of 1 to 500. Cover with dusting powder, absorbent cotton and a bandage. This treatment should be repeated daily until the wound is healed."

McCormick

The Lily Bowl Gets the Cream

CREAM is worth too much to waste, yet it is being wasted by the ton every day by old-fashioned methods of skimming. Today there is no excuse for such waste. The Lily bowl gets all the cream it is possible to get, leaving only a drop or so to the gallon of skimmed milk.

Let's take a close look at this wonderful bowl. It is compact and convenient to handle. It lifts off the spindle, leaving the spindle in the separator where it belongs. It comes apart easily, but it can't leak. The disks provide a greater skimming surface than is found in other bowls. Combined with them are six cream gatherers—just twice the number other separators have. Separation begins the instant the milk enters the bowl, and there is always a clear passageway for the cream.

There is not even a cream regulating screw in the cream passageway. You make your cream thicker or thinner by regulating the amount of milk mixed with it, but thick or thin, you get all the cream when you use a Lily cream separator.

The bowl is not the only good Lily feature. The McCormick local agent, who sells Lily cream separators, will show you how every other feature is worked out just as carefully. See him or write us at the nearest branch house.

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Whip May Spoil Colt.

Whipping a colt will not break him of rearing up and falling over backwards. It may so fix the habit that a good horse will be ruined. This habit generally begins on account of a sore mouth or rough handling and jerking.

Handle the colt carefully and kindly. Use an easy bit, a big, straight bar bit preferably, if the colt's mouth is tender, and perhaps the habit may gradually be iliminated.

If the colt pulls back on its halter when it is tied up or attempts to rear when tied, be sure to always have a good strong halter rope and tie the animal so securely that he can't get loose nor break the rope. Some horsemen like to hitch the halter rope to a ring two or three feet higher than the horse's head in the barn. It is pretty hard for him to pull back if his head is tied high.

"Metallic" Corrugated Iron Barns are Lightning, Fire, and Weather-Proof

Lumber and labor are too expensive to be used in farm buildings; besides, wood buildings are easily destroyed by fire and lightning. "Metallic" Corrugated Iron makes buildings that last a life-time; that are warm and dry; and proof against fire, lightning and weather.

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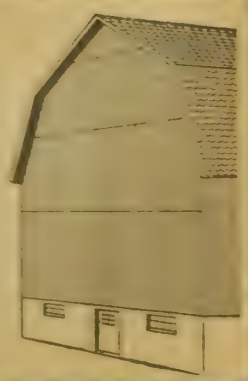
You save money on labor and lumber when you use "Metallic" Corrugated Iron. Write for complete information before you buy any building material. We can save you money. Our corrugated iron is made in galvanized or painted sheets, straight or curved. 7



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POULTRY

Feeds for Poultry.

The crushing or rolling process renders the oats more palatable and more easily digested. In this form they stand in a class by themselves as a grain for laying hens. Oat chop with the hulls sifted out forms the best fattening grain to be obtained. It should form at least two parts of any fattening ration. Pin head or granulated oatmeal is an excellent food for chicks. Oat feed, which is simply hulled oats ground up fine, should be used in any dry mash for chickens. Oats are a bone forming food for young stock. In England oats are the leading grain for poultry which accounts for the heavy bone in all breeds of poultry of English origin.

Barley, though of almost the same composition as oats, cannot be made as palatable nor as digestible by any process of crushing. As a single grain for laying stock it gives but poor results, but if fed in in combination with others it works out all right, although there is always more or less difficulty in getting hens to eat it if they are fed more appetizing grains along with it. Barley chip also works in well as part of a fattening ration. Corn is very rich in fat producing food, but if fed liberally with plenty of exercise it can be fed as a single grain to good advantage for a considerable time. With heavy [illegible] is always inclined to be too [illegible] but if fed [illegible] with wheat [illegible] and oats it helps to [illegible] American poultry producer corn forms the chief [illegible] laying and fattening grain. Cracked corn is excellent as a part of the grain ration for growing chicks. Corn chop works in well as a part of a fattening ration although the yellow varieties always have a tendency to produce a yellow [illegible] The commercial chick foods usually contain about 25 [illegible] Wheat is [illegible] still there are conditions where it would pay the farmer to feed some of it in preference to feeding wheat exclusively or any other grains. After all most of the grains' greatest feeding value lie not only in their own feeding properties, but in the way they mix in with others and their effects on these. Peas and buckwheat both have a tendency towards fattening fowl, [illegible] will work in well with any farm grain to make a laying ration.

Variety is Chief Aim

Variety should be the chief aim in feeding all these grains. The cost will, of course, determine largely what grains you will feed to your poultry. Under farm conditions the usual practice

Exhibition Winnipeg Poultry Halifax, Fredericton, Amherst, 1914. Wolfville Poultry Yards, Wolfville, N.S.

and use screenings for the hens. This practice is all right providing you do not attempt to feed the hens on weed [illegible] combining the various grains or alternating the [illegible] results will always be obtained. Under almost all conditions boiling grains will improve them. This is especially true of barley and to a certain extent of oats, but the time taken to do it is seldom repaid by increased returns. Alternating with boiled grain would probably be the most profitable method to follow.

A poultry ration can be divided into [illegible] the two most commonly fed and the [illegible]

not relished to the same extent as either mangels or cabbage. Lettuce and onions are chiefly used for young stock. Alfalfa and clover if stored for winter use can be fed either in the dry state or cut and scalded and mixed in a mash. For summer they form excellent pasture, but in winter they do not give any succulence. Sprouted oats are probably in a class by themselves as a green food, but under farm conditions it is quite difficult to secure them. A frame set alongside of a furnace would make a good sprouter. The oats should be soaked twenty-four hours and then spread one half to three-quarters of an inch thick on frames having screen bottoms. Keep covered with bags [illegible] Sprinkle with warm water every morning. Sprouters of various sizes may be purchased at a nominal cost, but the history of nearly every sprouter is a few winters' use and then it is set away for good or until the sprouted oat idea strikes you again. The sprouted oats bring the feed as near to summer conditions as is possible with any feed. Rape, lawn clippings and so on might also be used as green food.

The Value of Buttermilk

In the line of animal or meat food we have buttermilk as the best. Its feeding value does not lie in its own food properties only, but in its effects on other food. For young stock it aids digestion, promotes growth, wards off disease and imparts vigor and vitality indirectly. It is worth anywhere from five to fifteen cents a gallon as a food for growing chicks. For laying hens it also has its place.

Edwardsburg
"Crown Brand"
Corn Syrup
POUR IT ON PORRIDGE
YOU can't imagine how delicious a dish of Oatmeal Porridge becomes when it is sweetened with "Crown Brand" Corn Syrup.
Have it for breakfast to-morrow — watch the kiddies' eyes sparkle with the first spoonful — see how they come for 'more'.
Much cheaper than cream and sugar — better for the children, too.
Spread the Bread with "Crown Brand" — serve it on Pancakes and Hot Biscuits, on Blanc Mange and Baked Apples — use it for Candy-Making.
"Crown Brand" Corn Syrup is more delicate in flavor than "Crown Brand". You may prefer it.
ASK YOUR GROCER IN 2, 5, 10 & 20 LB. TINS.
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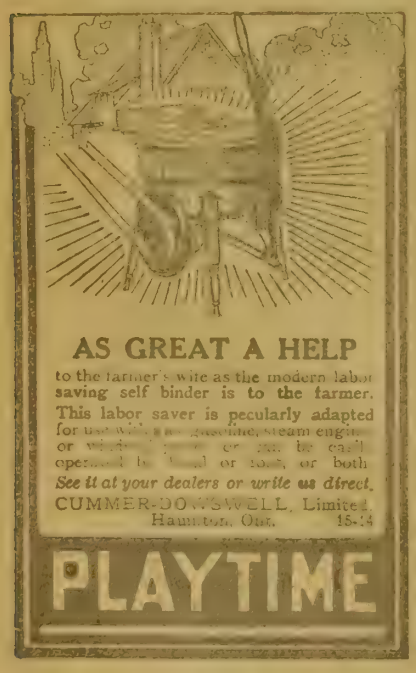
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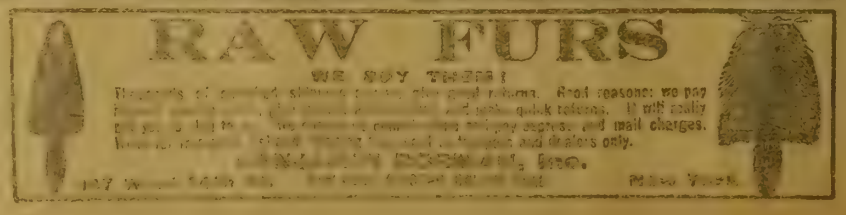
to the farmer's wife as the modern labor saving self binder is to the farmer.
This labor saver is pecularly adapted for use with a gasoline, steam engine or water power or can be easily operated by hand or foot, or both
See it at your dealers or write us direct.
CUMMER-DOWSWELL, Limited
Hamilton, Ont. 15-14
PLAYTIME

MADE IN CANADA



It stimulates egg production and wards off disease. In one experiment last winter it was worth $37.50 a ton as an egg producing food from November 15 to March 15. Skim milk is about the same in feeding value, especially after it has soured. Milk aids digestion. Cut green bone is a very good egg producing food, but it must be fed in limited quantities. Its cost compared with its real value is too high to use when buttermilk and other milk is available. The old idea which is prevalent to a certain extent yet was that in order to get winter eggs you must have a bone cutter to cut bones for your hens. "Increase your egg yield," "Double your profits," "Pay for a bone cutter" and various other "ads." led you to buy a bone cutter only to find that they were extremely hard to operate and you got but fed more eggs and in the end the bone cutter was stowed away as a poor paying investment with the rest of your discarded tools. Green bone costs about three cents a pound. It contains a large per cent of muscle and egg forming food and also quite a lot of lime in the bone. It is hard to keep it unless it is frozen and therefore it is necessary to cut it as you need it. Beef scrap is another of the commercial forms of meat food. It is the offal from slaughter houses, boiled, baked, dried, ground up fine with a preservative added. A large per cent. of this is dried blood. Hoof and horn have but little feeding value and therefore the freer of this the better the quality of the beef scrap. The price of it is usually about four cents a pound. It mixes well with dry mashes for growing and laying stock or can also be used in wet mashes. It is the most convenient form of meat food that can be purchased. It will keep indefinitely and is always ready for use. The offal from butchering is usually the only special meat food fed on the farm and is porbably the cheapest too, but usually the supply lasts only a short time and as a result it has but little effect on the egg production. It cannot be used at all in the summer when you need meat food the most for growing chicks. They absolutely must have some form of meat food if they are to develop and do their best.

In the way of mineral matter we have oyster shell and grit. The former furnishes the lime required to manufacture the egg shell and the latter furnishes grinding material to enable the hen to digest her food thoroughly. Old mortar or pounded crockery will take the place of the former, and coarse sand or fine gravel will answer for the latter. Grit only is necessary for young or growing stock, but both are necessary for laying stock. Mushy, mouldy or sour food of any kind should not be used. Digestive disorders usually follow the use of such foods.

Charcoal keeps the Laying Birds In good Condition.

No farmer should attempt to keep poultry without feeding charcoal regularly. Charcoal can be made on the place at the expense of very little time, and is as important for the welfare of poultry as are grit or oyster shell.

My method of burning charcoal is as follows: A pit about four feet square and about eight inches deep is dug. Of course, the pit can be made as large as one desires. In the bottom of the pit, light brush, cornstalks or anything that will make a quick fire, is placed and on top of this heavier brush or dry fire wood. The pile is topped with several layers of green wood, cut into lengths of two or three feet. When the pile is compactly and neatly arranged, pieces of old sheet iron roofing are placed on top and covered with dirt.

The brush at the bottom of the pit is then lighted in several places and allowed to burn freely until the mass seems to be well ablaze. When burning well, dirt should be gradually banked around the edges, shutting off most of the air. A few small openings should be left for the entrance of air and the escape of smoke. When the mass is throwing off dense clouds of smoke without any blaze showing the wood is charring properly, but where the smoke is light in color, it is an indication that the mass inside is blazing and more of the air should be shut off. Care should be exercised that too much of the air is not shut off for the fire will go out. The mass should be kept smoking freely.

Charcoal is a blood purifier and corrects the evil of overfeeding and injudicious feeding. It is a good remedy for bowel trouble. It is perfectly safe to keep charcoal before the fowls all the time. As charcoal has great absorbent powers for gases, it should be kept in covered vessels, and only sufficient for one day's feeding should be kept in the hoppers. If the hoppers are filled, the charcoal not immediately consumed will soon become impregnated with the foul odors of the poultry-house and will be unfit and unsafe for use. When charcoal is kept in open vessels, it should be heated before giving to the fowls. Heating drives off the impurities and makes it as good as when fresh.—A.

You Can't Make BEAVER FLOUR *Bread* with a western wheat Flour,

YOU can't get the delicious, nutty, homemade flavor, with western wheat flour, that you get with "Beaver" Flour.

You can't get the lightness—the snowy whiteness—the fine texture—the uniform, dependable quality and strength—with western wheat flour that you get with "Beaver" Flour.

The Agricultural Colleges have proved—by experiments — that a true blended flour like "Beaver" Flour, is the only one suitable for both Bread and Pastry.

The bakers, in the big cities like Toronto, have proved that it pays to use a blended flour like "Beaver", because all their customers want "that delicious Bread with the tasty, homemade flavor".

Try "Beaver" Flour yourself. Test it for Bread and for Pastry—and you'll see that it IS BEST for both. Your grocer has it.

DEALERS—Write us for prices on Feed, Coarse Grains and Cereals. 159

THE T. H. TAYLOR CO. LIMITED, - CHATHAM, Ont.

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Saves the Expense of Two Men and Two Horses

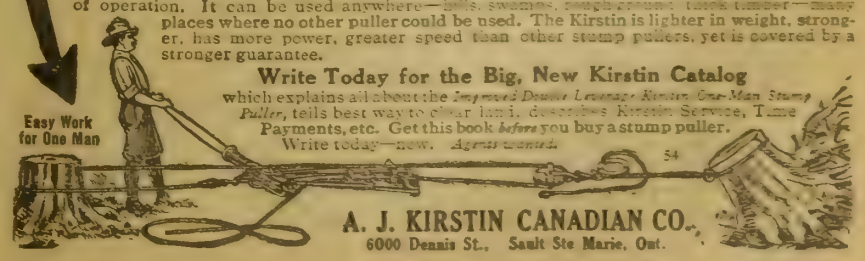
Clear your land the Kirstin Way—the simple, easy, practical, *economical* way. You don't need a stump pulling crew. One man *alone* handles and operates the Kirstin with ease. Why buy a big, costly, cumbersome outfit that requires several men and a team or two, when you can clear your land at far lower cost with a Kirstin? Prove our claims for the Kirstin by a

10-DAY TRY-OUT ON YOUR FARM

At many land clearing contests the Kirstin has *proved* its superiority. After a competitive demonstration, the University of Minnesota bought a Kirstin for their own use. Facts speak louder than words. The U.S. Gov't. has purchased a number of Kirstins after hard and thorough try-outs. Why? Because the Kirstin is lower in first cost and lower in cost of operation. It can be used anywhere—hills, swamps, rough ground, thick timber—many places where no other puller could be used. The Kirstin is lighter in weight, stronger, has more power, greater speed than other stump pullers, yet is covered by a stronger guarantee.

Write Today for the Big, New Kirstin Catalog

which explains all about the *Improved Dennis Leverage Kirstin One-Man Stump Puller*, tells best way to clear land, describes Kirstin Service, Time Payments, etc. Get this book *before* you buy a stump puller. Write today—now. *Agents Wanted.*



A. J. KIRSTIN CANADIAN CO.,
6000 Dennis St., Sault Ste Marie, Ont.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Where the White Nun Walks.

(By E. Everett-Green.)

It was the tradition at Whiteladies that not only all the daughters but that all the granddaughters should be married from there.

It was a pretty family custom, which must have entailed a good deal of trouble and cost upon our delightful, picturesque, white-headed grandparents whom we all adored; but it was the tradition of the house, passed down from generation to generation, and the family gatherings, which became frequent as we girls of the rising generation grew up and were asked in marriage, were a source of gerat happiness to those who took part in them; and a family wedding was a more intimate and interesting event in our family, by consequence, than it generally is in these hurry-scurrying days of the twentieth century.

Somehow when you reached the long beech avenue which led up to Whiteladies, and passed through the wrought iron gates, set in the high stone wall which encircled the house and gardens and a portion of the park, you seemed to leave the twentieth century behind, and almost expected to see cavaliers with love-locks promenading the green glades and wide stone terraces, with graceful stately ladies on their arms—powder on their hair, patches on their faces, their hooped petticoats and trailing brocades making patches of vivid color against the old tsone walls.

The house was all mullioned windows, oriels and unexpected corners and angles. It was very big, covered much ground, yet never overwhelmed you by its size and grandeur. It was like the grandparents themselves—beautiful, stately, mellow, benignant. There was a hush about it which awoke to sweet sounds—the laughter of happy children, the gay calls of girlish voices, the beat of flying feet to the dances in the long ball-room, the lilt of music awakened not by hired professionals but by the skilled fingers of the daughters of the house or their children.

The blare of the motor horn was seldom heard here. The reek of its breath seemed desecration to the sweet fragrance which hung over Whiteladies.

"Isn't it delicious to be here again?" cried one to the other, as we danced up and down the long corridors and ran to grandmother with a hundred little confidences and a thousand trivial questions, always welcomed, always kindly considered. Grandmother was one of those beautiful persons who was never in a hurry, who always laid down her book or her pen to give you her full attention, who always listened to what you had to say. Her manners were as lovely as her beautiful white hair. Both seem going out of fashion now—replaced by transformations and "snap."

It was Esther who was to be married this time, and she had asked me to be one of the bridesmaids, and I had promised I would, though now I was getting well chaffed for it.

"Three times a bridesmaid, never a bride!" they chanted in my ears; but I did not care. Esther was my favorite cousin, and she was going away to a brilliant life led in foreign courts, and everybody said that her husband would be an ambasador in time. She was making a rather brillian marriage, and we were all proud of her and her prospective future. Eustace Barrington was very delightful to us all, and his proesents for the bridesmaids were lovely. It was going to be a charming wedding. There were to be eight of us girl cousins as bridesmaids, and six little pages in white satin—perfect little ducks they looked; and two tiny toddlers of girls, dressed as the mites were in the days of the Stuarts. You wanted to pick them up and kiss them, they were so bonny!

Then the dressmakers had all been true to time, and nobody was worried or flurried; and the only person yet to arrive was a certain "Tony Talbot," who was to be the best man to Eustace on the eventful day. He had some engagements to keep which would prevent his coming till just the eve of the day; and he was to bring with him a case of family jewels, which were being re-set for Esther, but which Eustace particularly wanted her to have to take away with her on departure.

When the weddings at Whiteladies took place, the dower-house in the park was allotted to the bridegroom and his immediate supporters. Practically they belonged to the house party, but the convention of their occupying a different abode was thus observed.

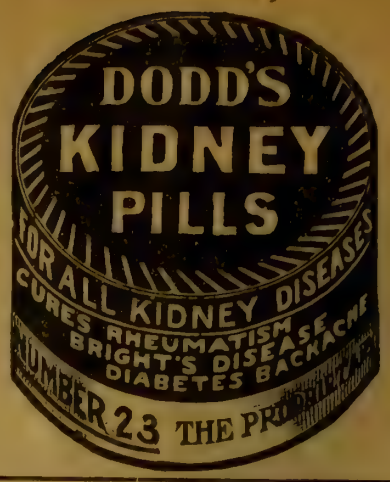
And now the eve of the wedding-day had come. We had decorated the church, we had made the bride's bouquet and our own with the help of the head gardener. Bought flowers were taboo at Whiteladies, and how much more fragrant and delicious were the graceful nosegays made and designed by loving hands, and interwoven, as it were, by fond wishes and bright hopes! The house was full from end to end, the echoes seemed all awake and astir. It had been hard to get the children to bed. Yet there was no confusion or undue hurry perceptible. Dinner was served with all the quiet, simple ceremony which belonged to the house, and at the long table only one empty place indicated the non-arrival of the to-morrow's best man.

"It is all right," Eustace told us. "He may be late; but he will be here. I had a wire at five o'clock. It is the jeweller who has run things a bit close. But Tony will be here some time tonight. You can always trust him when he says a thing. I'm sorry, though, that he could not come before to make your acquaintance. He is a nice fellow. You would have liked him."

It was a warm, still, autumn night when we girls—we bridesmaids—adjourned by common consent out upon one of the terraces, where the fitful moonlight made wavering lights and shadows, and squares of light from open windows lay yellow on the grey flags. We were laughing together over matters past, present and future, when somebody exclaimed:

"Anybody going to look for the White Nun tonight?"

Now there was a legend at Whiteladies concerning a certain long grass-grown walk about a quarter of a mile from the house, and near to the ruined chapel which marked the site of an old monastic foundation. Probably the present house had been built up out of the material of the ancient nunnery which had been swept away by Henry's Cromwell. And, of course, there were traditions of ghostly happenings in and about the place, though these were not very definite or well authenticated. But the traditions of a White Nun, who walked to and fro in the grass-grown avenue beneath the yew



A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by this method. Write today. Address: Mrs. M. Summers, Box 309, Windsor, Ont.

How to avoid Operations

These Three Women Tell How They Escaped the Dreadful Ordeal of Surgical Operations.

Hospitals are great and necessary institutions, but they should be the last resort for women who suffer with ills peculiar to their sex. Many letters on file in the Pinkham Laboratory at Lynn, Mass., prove that a great number of women after they have been recommended to submit to an operation have been made well by Lydia E. Pinkham's Vegetable Compound. Here are three such letters. All sick women should read them.

Marinette, Wis.—"I went to the doctor and he told me I must have an operation for a female trouble, and I hated to have it done as I had been married only a short time. I would have terrible pains and my hands and feet were cold all the time. I took Lydia E. Pinkham's Vegetable Compound and was cured, and I feel better in every way. I give you permission to publish my name because I am so thankful that I feel well again." —Mrs. Fred Behnke, Marinette, Wis.

Detroit, Mich.—"When I first took Lydia E. Pinkham's Vegetable Compound I was so run down with female troubles that I could not do anything, and our doctor said I would have to undergo an operation. I could hardly walk without help so when I read about the Vegetable Compound and what it had done for others I thought I would try it. I got a bottle of Lydia E. Pinkham's Vegetable Compound and a package of Lydia E. Pinkham's Sanative Wash and used them according to directions. They helped me and today I am able to do all my work and I am well." —Mrs. Thos. Dwyer, 989 Milwaukee Ave., East, Detroit, Mich.

Bellevue, Pa.—"I suffered more than tongue can tell with terrible bearing down pains and inflammation. I tried several doctors and they all told me the same story, that I never could get well without an operation and I just dreaded the thought of that. I also tried a good many other medicines that were recommended to me and none of them helped me until a friend advised me to give Lydia E. Pinkham's Vegetable Compound a trial. The first bottle helped, I kept taking it and now I don't know what it is to be sick any more and I am picking up in weight. I am 20 years old and weigh 145 pounds. It will be the greatest pleasure to me if I can have the opportunity to recommend it to any other suffering woman."—Miss Irene Froelicher, 1923 Manhattan St., North Side, Bellevue, Pa.

If you would like special advice write to Lydia E. Pinkham Med. Co. (confidential), Lynn, Mass. Your letter will be opened, read and answered by a woman and held in strict confidence.

Was All Choked Up

Could Hardly Breathe.

BRONCHITIS

Was The Cause; The Cure Was

DR. WOOD'S Norway Pine Syrup.

Mrs. Garnet Burns, North Augusta, Ont., writes: "I caught a dreadful cold, going to town, and about a week after I became all choked up, and could hardly breathe, and could scarcely sleep at night for coughing. I went to the doctor, and he told me that I was getting bronchitis. My husband went to the druggists, and asked them if they had a cough medicine of any kind that they could recommend. The druggist brought out a bottle of Dr. Wood's Norway Pine Syrup. I started using it, and it completely cured me of my cold. I cannot tell you how thankful I was to get rid of that awful nasty cold. I shall always keep a bottle of Dr. Wood's Norway Pine Syrup on hand, and I shall only be too glad to recommend it to all others."

Dr. Wood's Norway Pine Syrup is a remedy that has been on the market for the past twenty-five years, and we can recommend it, without a doubt, as being the best cure for coughs and colds that you can possibly procure.

There are a lot of imitations on the market, so when you go to your druggist or dealer see that you get "Dr. Wood's;" put up in a yellow wrapper; three pine trees the trade mark; the price, 25c and 50c.

The genuine is manufactured by The T. Milburn Co., Limited, Toronto, Ont.

trees, was firmly believed through the country-side; and it was always whispered that the most likely time to see this ghostly visitor was upon the eve of some family "happening"—whether the occasion might be a birth or a death or a marriage.

So it had become amongst the girls of the house something o fa point of honor for one of their number (you must not go in couples—the Nun had never been seen except by a solitary watcher) to go forth alone in the dark to the place where the White Nun walked, and give her a chance of showing herself, and the watcher a chance to cover herself with glory by having seen her.

Truth to tell, these vigils had not been very successful. Once Ada had come tearing back as white as a ghost, declaring that the Nun was sitting on a stone and moaning. But alas!—inquiry and investigation proved the Nun to be nothing more romantic than a dun-colored Jersey cow who had been unwell, and isolated from the herd, had escaped to the grounds and was very sorry for herself on many counts!

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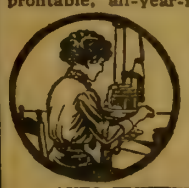
Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.



AUTO-KNITTER HOSIERY CO.
Dept. 226 257 College St. - Toronto
(Also at Leicester, England)

However, it so happened that Ada married within the year. And Ellen, who went ghostseeking at her marriage, was a bride some fifteen months later. It had been Esther who had gone to look for the Nun last year at Lucinda's wedding, and so tradition was growing that whoever dared make the venture was to win a husband before very long.

"Then Maude shall go!" cried Judith's merry voice. "Look here, you others, it's quite time our dear Maude did something to distinguish herself! And since she's going to dare to be a bridesmaid tomorrow for the third time, it's only right and proper that she should take the antidote as far as is possible and go ghost-hunting tonight. Perhaps the Nun keeps husbands up her wide sleeves, and drops their microbes about broadcast! Anyhow we'll send Maude! I bet she's in a mortal funk! I was going to volunteer for the service, but I'll wait for my chance on the eve of her wedding. Who'll bet that it will be within a year from now?"

There was a great deal of laughing, and I joined in, of course. But, truth to tell, I was in something rather like the 'mortal funk" that Judith had divined. I spent more time at Whiteladies than the others did; for my own parents had died, and though I had a home with Uncle John, I was almost half my time with the grandparents, and was steeped in the lore of Whiteladies, so that I believed a great deal more in the White Nun than did the others.

But there was no getting out of it. I was to go. And all I stipulated for was my long black cloak; for I felt that wrapped up in that I should feel a kind of protection, and might escape observation even from ghostly eyes!

They promised to wait for me, and to come and seek me if I did not get back in half an hour. And disguising my nervous fears under a laughing manner, I waved my hand and ran down the steps, taking the path across the moonlit gardens which lay in the direction of the ruined chapel and the yew walk.

For a few minutes I still heard the sounds of music and voices from the house; but soon these died away, and I was alone in the faint misty light, with only the call of the owls to break the stillness. That is an eerie sound at any time, and now I shivered and drew the folds of my cloak closer round me.

Then the moon went suddenly behind a cloud. All was very dark about me, and just ahead showed the black orifice of the yew walk, where the White Nun was said to move slowly or swiftly up and down.

My heart thumped against my ribs. My task was to walk the length of the avenue and then return. I should be mercilessly chaffed if I turned tail without having performed the allotted task. But I was simply shaking all over with that nameless fear which attacks us at night in lonely places, when everything takes on a new aspect, and you hear stealthy sounds everywhere that send your heart into your mouth.

But with the courage of despiration I plunged into the black tunnel, and at the same moment the moon came out again, or that at intervals it was crossed by bars of ghostly, wavering light.

What was that?

There were sounds—strange sounds—distant, indescribable, confused. I halted, a quarter down the tunnel, holding my breath, trembling in every limb. And next minute I saw it! The white, wavering, ghostly figure—gliding swiftly—oh, very swiftly—towards me.

I would have turned and fled, but my limbs refused to obey. The thing was coming nearer, lost in shadow sometimes, then emerging into the light again. It seemed to me as though I heard hoarse sounds, raucous breathings—and then it fell—it simply toppled over and lay its length in the shaft of moonlight. And at that moment my courage came back in great bounds. For it was not the White Nun at all. It was a man in a light driving coat, and he had fallen like a log, and it seemed to me as though I heard sounds in the distance—voices and steps. And something gave me courage to run out of the deep shadow into which I had slunk and to bend over the fallen man.

"What is the matter? Are you hurt? Can I do anything?"

He did not move or answer at once; but then he seemed to make a great effort. I bent down, for his voice was only a whisper.

"The jewels—for Eustace Barrington—take them. Run to the house with them. They are after me—jewel robbers! I've given them the slip; but they will catch me up. I'm done. But take them. Put your hand in the breast of my coat. You'll feel them!"

I felt something more — something warm oozing over his clothes.

"Oh, you are hurt!" I cried, "I will get help!"

"Take the jewels, I say—and run for your life!" Though his voice was only a whisper it seemed to thunder at me, if you understand. And I heard sounds of pursuit coming nearer. There was no time to get him to the house, to sumon help—to do anything. I had to think in ten seconds what to do.

"Can you move—just a few yards—under that yew tree?"

"Fly—take the jewels—and get to the house!" he panted; but he moved and half sat up. Nearer and nearer came the steps and the muttering voices.

"Into the shadow with you!" I cried, also in a whisper. "Don't you understand?—we cannot get away. In the shadows! Under my cloak. They will pass without seeing us. It is the only chance."

In two seconds we were there—in the hollow of the great yew tree. He on the ground—I was sure he was bleeding terribly—I crouching over him, and the black cloak spread over us both in the deep shadow. We heard the steps coming on—slowly now and cautiously; for the men knew they were in the proximity of some private house. Almost opposite our hiding place they paused in conclave, words of blasphemy and threatening import passing their lips.

Where was their quarry and victim? They were sure they had hit him. They were sure he would eventually drop in his tracks. Where in thunder had he got to? I shook all over lest they should produce a lantern and institute a search. But they did not do so. They pursued their way very coutiously I think as far as the end of the tunnel. From there the lights of the house could be seen, and when they arrived there they gave up the pursuit. I heard the steps returning. I heard them debating should they try

For your separator you want a Cleaner that cleans hygienically without leaving a greasy film — use

Old Dutch

Take a dose in time!

Don't let your system become lowered by the attacks of a cough or cold. "Safety First" — take a dose of Chamberlain's Cough Remedy at once. It loosens the Cough so that it soon disappears; it heals the soreness; strengthens the throat and lungs so they are unaffected by changes of temperature. Chamberlain's contains no narcotics or harmful drugs. While it gives relief from the first dose it may be safely used with the youngest. All druggists 25c. & 50c.

CHAMBERLAIN'S COUGH REMEDY

RAW GEO. I. FOX FURS

279 Seventh Ave., New York
Liberal Assortment
Prompt Returns Market Prices
Write for Price List

another road? Was there any chance of finding their victim fallen and bleeding in some other spot? Or had he reached safety already?

My heart beat so hard and fast that I could scarcely hear what they were saying. They seemed loath to leave this avenue.

'He bolted down here! I'm sure of it! I don't believe he had strength to reach the end. I know I hit him. I saw him reel as he ran more than once. He's given us the slip; but I'll bet he isn't far away."

"Then let's search! He'll have slipped away into the shadow. Likely he's fainted from the loss of blood. Who's got a light? Let's have a look. Great Blazes—what's that?"

(Continued in Next Issue.)

Why we Should Prune and the Different Treatment for Old and Young Trees.

(Continued from Page 252.)

which consists of central leader with branches radiating off from it gives too large and too high a tree for your conditions. It shuts out too much sunlight, thus making the production of clean, well coolred fruit a more difficult task than it should be. Now, there is probably no fruit section under the sun where all the available sunlight possible is needed more than here in these two valleys; furthermore, there are few sections where insect pests and funguous diseases naturally thrive any better than in your climate, so that the first factor in directing the shape of the tree is sanitation, and the central leader type cannot be called a sanitary type of tree. The open centre tree, while possessing admirable sanitary qualities, does not possess the strength of the central leader type, so that a combination of the two is more desirable.

This combination type consists in allowing the central leader to grow for the first year until five or six good branches arranged in a whorl and well spaced can be selected to form the framework of the tree.

By well spacing these scaffold limbs the tree is stronger than if all the limbs should arise from a small area where they would each be pulling against the other and would break down under heavy winds or heavy loads of fruit.

The central leader is not allowed to grow to any great height, so that you have a type with the combined advantages of the pyramidal form and the open centre and with their objections eliminated.

Having decided on the form our tree shall take we are now ready to follow the pruning, year by year. The first year or the fear the tree is set out, it will be necessary to head back all branches in order to give the roots an opportunity to get a hold and to make our trees stocky instead of long and willowy. In recent experiments conducted by the Station at Kentville, trees cut back when planted made a growth of 4.82 inches the first year and 20 inches the second, while trees not headed at all made a growth of 1 inch the first year and only 2.4 inches the second.

(Continued in Next Issue.)

Double Hip Braces Lock Each Separate Rafter
Each Separate Rafter Locked at Ridge with Double Steel Braces
Post Braces Set in Snug to Every Post

At Last—A Barn of Definite Strength

AT LAST—a barn that brings you unyielding strength just at the points you need it most. Naturally, you look for strength in steel barn construction. There are other essentials of course. But just as you need four wheels to a cart, so you want ***definite*** strength at every point where strain is greatest.

PEDLAR'S STEEL BRACE "WARDLE PATENT" BARNS

are making history in the Canadian farming world. They have set aside, for all time, the day of heavy wooden beams and posts. They have made unnecessary the loss of space from steel posts jutting far out from the walls, or projecting to the hips. They bring to the farmer of to-day the barn of to-morrow. They bring him ALL the room—ALL the strength—ALL the protection and convenience the science of steel construction has evolved.

PEDLAR'S Steel Brace "Wardle Patent"

See for yourself the clear, open space and greater roominess in all parts of the Pedlar Barn, made possible by Pedlar's Steel Brace "Wardle Patent"—not a new idea, but a brace that has proved its value through the test of ten years' usage. Notice how it sets up close to every post, entirely out of the way.

Double Hip and Ridge Braces Lock Each Separate Rafter

Safety in steel construction rests on a **positive hold** at the ridge and hip. So at these points in the Pedlar Barn you will find a double set of steel braces on each separate rafter. Think of it!—**Each Separate Rafter.** These powerful braces, placed right at the points of strain, mean as much to you as a solid steel beam from wall to ridge—and without excessive cost. No wonder the Pedlar Barn is stronger! No wonder you can expect to find it as firm and rigid fifty years from now as it is to-day!

An Advantage you Have Never Been Offered Before

An advantage found only in Pedlar's Steel Brace "Wardle Patent" Barn is the fact that you can operate your hayfork in the ridge or in either of the hips. An exclusive convenience that points still further to the scientific thoughtfulness called forth in Pedlar construction.

Inherited Security

The same famous "Pedlar" coverings that have provided such protection to the wooden frame barns in the past are now found in Pedlar's Steel Brace "Wardle Patent" Barn. "George" Shingles, in big, generous size, 24 in. x 24 in.; or if prefered, 26 gauge "Perfect" corrugated, galvanized iron roofing is supplied. Once the 28 gauge corrugated iron is placed on the wall frame, not one inch of wood appears from the outside. Pedlar's Steel Brace "Wardle Patent" Barn is absolutely LIGHTNING-PROOF, FIRE-PROOF, RAIN-PROOF, RUST-PROOF, and WIND-PROOF.

Surprises Await You

Once you see Pedlar's Steel Brace "Wardle Patent" Barn, surprises await you at every turn. Roof and gable windows, metal framed and glazed with wired glass, reflect abundance of light to all parts of the barn. Pedlar's "Superior" Barn ventilators supply ample ventilation and are proof against the nuisance of birds. Extra ventilation when threshing is available through the windows, which are made to open and close. Eavetrough, conductor pipe and complete accessories properly drain all water from the roof. Eave and Gable cornices make an airtight covering at these vulnerable points.

Everything Complete

Everything comes to you complete to the smallest detail ready for our expert workmen to set in and erect in a few short days. Wouldn't you like to know more about Pedlar's Steel Brace "Wardle Patent" Barn? Wouldn't you like to see plans and blue prints of just the size of Pedlar Barn best suited to your own farm? We will gladly send you, without obligation whatever, complete plans and working drawings without delay.

Tear Off and Mail the Coupon Now

THE PEDLAR PEOPLE, Limited, Oshawa, Ont. M F
Send me, without delay, Plans, Working Drawings and Cost Complete, of a Pedlar Steel Brace "Wardle Patent" Barn. It is understood this will put me under no obligation to you whatever.

Size of barn ____ x ____ Height of post ____ ft.

Name _____
Address _____

THE PEDLAR PEOPLE, Limited
(Established 1861)
26 Nazareth St., Montreal, Que.
Executive Office and Factories, Oshawa, Ont.
Branches—Ottawa, Toronto, London, Winnipeg.

THE LARGEST SHEET METAL FACTORY IN BRITISH EMPIRE — OSHAWA CANADA — THE PEDLAR PEOPLE LIMITED

Heard of Them From her Brother.

WHY MRS. MARCHBANKS USED DODD'S KIDNEY PILLS

She Found Quick Relief and Now Recommends All Women Who Suffered as She Did to Use Dodd's Kidney Pills.

St. Martin's, St. John Co., N.B. Jan. 17th. (Special).—Mrs. Violet Marchbank, wife of a well-known farmer living near here, is telling her neighbors of the splendid results she has got through using Dodd's Kidney Pills.

"My trouble started from a cold," Mrs. Marchbank states. "I had backache, my joints were stiff and my muscles cramped. I was irritable and always thirsty. My appetite was fitful and I felt heavy and sleepy after meals. Rheumatism was added to my troubles as well as headaches, and heart flutterings made me very anxious at times.

"I suffered for about two years and was far from being a well woman when my brother told me what great things Dodd's Kidney Pills had done for him and I made up my mind to try them.

"I sent and got three boxes and they helped me right from the start. I can recommend Dodd's Kidney Pills to all women who suffer as I did."

Every one of Mrs. Marchbank's symptoms was a symptom of kidney trouble. That is why she found such quick relief in Dodd's Kidney Pills.

Sizes for 2, 3 and 4 horses.

THE BISSELL DISK

has made a great record throughout all Canada. There are good reasons why this is so. Balanced Right—Does not hump up. Improved Plate—Cuts and turns soil over. Hitches well Back—Easy draught. This Disk has several imitators, but no equal. None genuine without the name "BISSELL." Test trials given on hard land with anything that cultivates. Write Dept. M for free Catalogue. 92

T. E. BISSELL CO., LIMITED, ELORA, ONT.

Diamonds on Credit

TERMS: 20% Down—$1-2-3 WEEKLY

Let us send you a Diamond on approval at our expense

If satisfactory, send us one-fifth of Purchase Price at first payment. Balance can be paid weekly or monthly. We pay all delivery charges.

SEND FOR CATALOGUE TO-DAY—NOW. DON'T DELAY

A Diamond is the best investment you can make

Diamonds increase in value 10 to 20 per cent. each year. A Diamond is the ideal gift for the loved one. We give better values on easier terms than any house in Canada. "We trust any honest person."

All transactions strictly confidential. We send Diamonds to any part of Canada.

JACOBS BROS.,
DIAMOND IMPORTERS,
15 Toronto Arcade, Toronto, Can.
Dept H.

For a United Policy.

(Continued from Page 247)

On rising to address a Nova Scotia audience for the first time, Hon. J. A. Murray, Minister of Agriculture for New Brunswick, was most cordially received. He had not proceeded far until his hearers appreciated that the sister Province, too, had an eloquent Hon. Mr. Murray. He paid a warm tribute to the kindness of his friend Premier Murray of Nova Scotia. He brought felicitations from the people of New Brunswick to the people of Nova Scotia on the advanced step they had taken in agricultural education, and especially with regard to the introduction of a branch of technical learning designed for the women of the farm. He was brilliant in his allusion to the present battle for justice, righteousness and truth being waged in Europe, and congratulated the khaki dressed boys before him on their splendid appearance.

We on this side of the Atlantic had a goodly heritage, one worth fighting for, worth dying for. The question might be asked why were the representatives of the Maritime Provinces gathered here tonight. He said it was the goodly heritage. He often asked himself, can there be in all the wide world a finer country than this? It was to develop this heritage of rich meadows and broad acres, and he would stop here to congratulate Premier Murray on the possession of Principal Cumming and this Agricultural College. In New Brunswick they had agricultural schools, three in number, but they wanted Nova Scotia to have the College. Their schools would fit the student for advanced learning in the college.

In New Brunswick they recognized that the Provinces had one aim—and one Agricultural College was sufficient for all. They had nothing in common greater than that of agriculture. He emphasized that matters of politics did not enter into the discussion. It was a discussion on ways and means for a better condition. He was not discussing Maritime federation, but federation along lines of agriculture, and more progress along this line. Agricultural action would be the watchword, and directing his closing remarks to the chairman, he said: "We propose to assist you along these lines."

Among other speakers was Mayor Stackford, of Truro, who was present with his Town Council. Local talent assisted in making the occasion a happy one with a programme of music, and a generous treat was handed through the audience. Sergt.-Major Ford of the 106th urged enlistment among the younger men. A program of songs and choruses was well received.

RENNIES SEEDS

PUREST-CLEANEST
MOST RELIABLE
GET CATALOGUE
AT BEST DEALERS
OR DIRECT
190 McGill St., Montreal, Que

Serious Horse Distemper.

Much has been said recently in the local papers regarding the serious epidemic which horses throughout the Maritime Provinces are suffering from at the present time, causing death in almost every instance where it attacks the animal. A recent statement in the papers here stated that veterinarians are unable to either prevent contagion which they think in many instances is carried on the clothes of persons that attend horses, or cure the disease after it once gets established.

It may therefore be of interest to horse owners to know the peculiar fact that English veterinarians not only prevent contagion, but in some cases cure the disease after it is established by the use of LUMP ROCK SALT. Every horse that has been taken overseas from Canada has been provided with a lump of English Rock Salt, and the report is that the horses arrive in most excellent condition. Also, upon enquiry amongst the horsemen in general in this city, it has been found that those who provided their horses with lump salt have escaped the epidemic entirely, while teamsters in this section have been known to lose as much as $900.00 worth of horse flesh in three years' time, which possibly could have been entirely prevented if a few cents had been used for the purchase of this very necessary food.

Every one knows that salt is a very cheap article and there is no excuse for parties not being supplied with it, the price being only: 1c per lb. It can be had in assorted size lumps from Gandy & Allison, 3 and 4 North Wharf, St. John, N.B.

Dont' apply manure heavily. It is better to treat the land lightly and otfener.

If you wish to purchase Fencing and Gates to advantage and save dollars this is the time to do it.

Wire is steadily advancing in price, far beyond the advance in Fencing, and Wire Fencing must advance very soon to correspond with the advance in wire. "ORDER NOW."

Purchase the Maritime Woven Wire Fencing and Gates, the best the market affords. Maritime Fencing is guaranteed.

Ask for Catalogue and prices for this Fence, also Gates, any size required.

The New Brunswick Wire Fence Company, Ltd.,
MONCTON, New Brunswick.

Feeding Stuff Definitions.

(Continued from Page 251)

suitable grinding. It it contains any considerable amount of bone, it must be designated digester meat and bone tankage.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors. The product shall bear the designation indicating the cereals of which these grains are composed.

Brewers' dried grains are the properly dried residue from cereals obtained in the manufacture of beer.

Malt sprouts are the sprouts of the barley grain. If the sprouts are derived from any other malted cereal, the source must be designated.

Alfalfa meal is the entire alfalfa hay, ground, and does not contain an admixture of ground alfalfa straw or other foreign materials.

Chop is a ground or chop feed composed of one or more different cereals or by-products thereof. If it bears a name descriptive of the kind of cereals it must be made exclusively of the entire grains of those cereals.

Screenings are the smaller imperfect grains, weed seeds and other foreign material separated in cleaning the grain.

Shipment of Potatoes to United States.

On and after the 1st January, 1916, potatoes may be shipped from Canada to the United States, subject to the following conditions:—

(1) Potatoes offered for export to the United States must be free from injurious diseases and insect pests.

("Injurious diseases and insect pests" shall not apply to diseases common and wide-spread in both Canada and the United States, but in the case of even such common and wide-spread diseases the stock offered for shipment shall be reasonably free from infection with such diseases.)

(2) No shipment may be made until a permit has been issued to the United States importer as provided for in the United States regulations. Each shipment should therefore be designated on the accompanying papers by the permit number which will be furnished by the United States importer.

Inspection will be made by a United States Inspector at the port of entry specified in the permit, and if the shipment be found to be diseases, entry may be refused.

(3) No inspection or certificates will be required prior to shipment, but potato growers and shippers are advised that the continuation of such entry will depend on the offering for entry into the United States of potatoes free from dangerous diseases and insect pests.

All persons engaged in this trade should have their potatoes carefully "racked," and any diseased or scabby potatoes removed.

For further information, apply to the Dominion Botanist, Central Experimental Farm, Ottawa.

Published by the direction of the Honorable Martin Burrell, Minister of Agriculture, Ottawa, December 27th, 1915.

Ventilation and Fresh Air.

Supplying of Pure Air to Homes in Winter of Utmost Importance

Live night and day as far as possible in the fresh air.

With the advent of the winter season, and consequent lower temperatures, comes the usual sealing up process in the homes. A supply of fresh air becomes secondary in importance to the exclusion of the colder atmosphere. The consequence is insufficient pure air to properly sustain life at its best.

The open air is the greatest disease preventing and disease-curing agency

Your Kidneys

may cause DROPSY, RHEUMATISM, BACKACHE or GENERAL WEAKNESS.

Dr. Cassell's Tablets are the Proved Remedy. Take them for all Kidney & Urinary Troubles.

In these trying complaints Dr. Cassell's Tablets are of proved value. They restore perfect efficiency to the kidneys by nourishing the nerves which control kidney action, and thus enable the system to get rid of uric acid and other impurities which are the cause of Urinary Troubles, Dropsy, and Rheumatism.

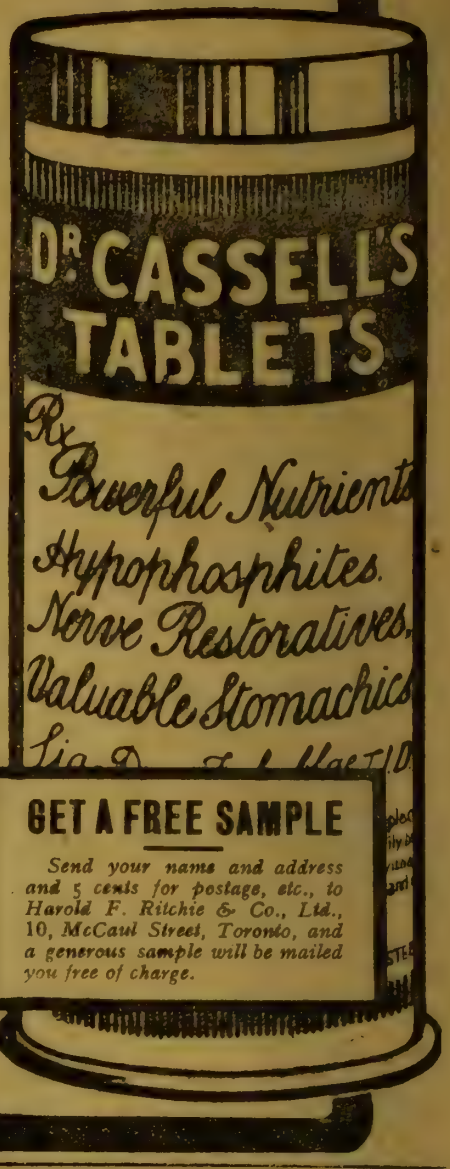
Dr. Chas. Forshaw, D.Sc., F.C.S., etc., the well-known scientist, says: "I have thoroughly tested Dr. Cassell's Tablets, and can conscientiously recommend them as an eminently safe and effective remedy for all forms of nerve and bodily weakness. My knowledge of Dr. Cassell's Tablets leads me to the opinion that the ingredients form a remarkably potent medicine, quite safe for young and old in cases of nervous prostration, debility, anæmia, loss of flesh, malnutrition, children's weakness, spinal and nerve paralysis, and many forms of stomach and kidney troubles."

Dr. Cassell's Tablets raise the vital standard of the entire system, and thus promote kidney health and general health when other means fail.

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

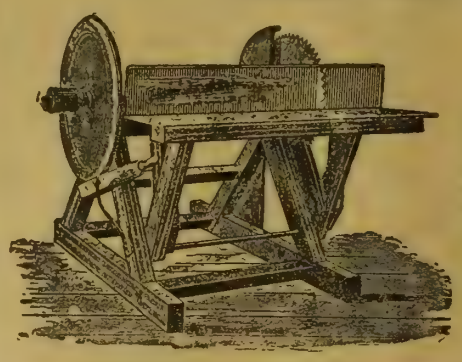


GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

Sussex Wood Cutters Cut Expenses

Consult Our Quality Line Before Buying



Short Swing Wood Cutter

Wood Cutter Saws guaranteed at the right price. All sizes. Prompt delivery.

Flat Roller Table.

CONVENIENCE ECONOMY DURABILITY

are the three money-making qualities embodied in our Wood Cutting Machines. No frail parts to give out in a season's use. Built to last a life time. Frame is made of well seasoned birch, bolted and mortised; table of heavy steel plating in one piece.

Swing Table Machines built on skids, bearings supplied with compression greese cups. Especially adapted for use with gasoline engines. Made in four styles—Long Swing, Long Swing Improved, Short Swing, Flat Table.

Ask for our Catalogue and Prices, it will pay you.

Remember we also manufacture Trenholm Gear Hay Presses, Grain Grinders, Root Pulpers, Feed Boilers, etc.

The Sussex Manufacturing Company, Limited, Sussex, N. B.

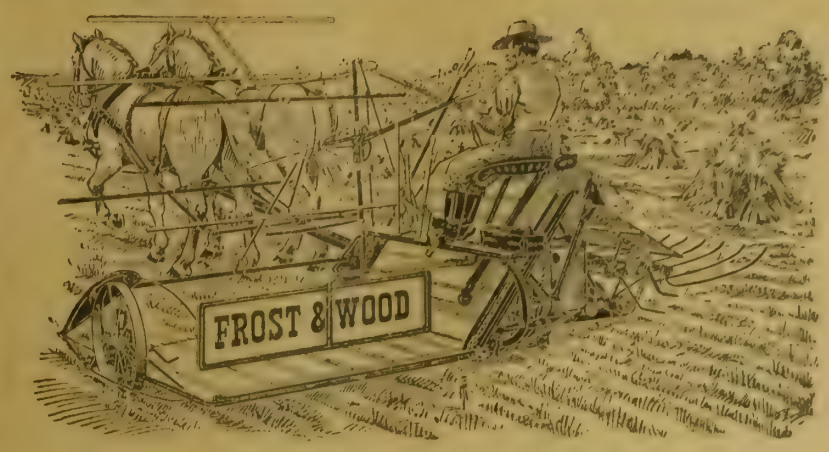
in existence. The air we inhale daily is by weight twice as heavy as the food and drink we swallow. A man may live for weeks without food, for days without drink, but only a few minutes without air. Much greater care should therefore be taken to supply to our homes, places of business, schools and public halls a sufficient amount of pure air.

Authorities agree that each adult requires 3,000 cubic feet of air per hour. On this basis the total air content of a room 10 x 10x 10 should be renewed three times every hour. The secret of good ventilation is to renew the air in a room at least thus often, day and night, without creating a draught. Owing to this danger it is necessary that the foul air be removed and fresh air admitted to inhabited rooms at such places as will not give rise to draughts. The simplest method of natural ventilation is that of more or less open doors or windows. As the most impure air in a room is at the ceiling, and the freshest at the floor, windows should be made to open from the top.

Winter and summer the bedroom window should never be closed when the room is occupied, except during very damp or foggy weather. Sleeping in cold air is not at all dangerous, if one is properly clad, although it may be so if protection be insufficient, and especially if the cold air plays upon the sleepers' head. The open window is quite as essential to a large bedroom as to a smaller one. It cannot be too often repeated that tuberculosis is not contracted by exposure to cold, as our sanitariums are situated in the coldest and driest climates. Dust and badly ventilated houses and factories are the real cause of this disease. Sir Morell MacKenzie, physician to the late King Edward, said: "The process of re-breathing air that has already been used, if long continued, leads to asphyxia and death. Short of this much so-called 'delicacy,' susceptibility to cold, languor, headache and nervous depression are also due to the same cause."

Canada is fortunately gifted with a bracing and healthy climate, resulting in the developing of a race of sturdy manhood. When pure and fresh air means to much in life, why shut it out rfom our homes, seal ourselves in and re-breathe the air from which we have already extracted and absorbed the life-giving element?

Buy Your Binder RIGHT



The most important implement investment any farmer can make certainly is his Binder, and right there, because thousands of farmers realize that fact---is the reason for the tremendous popularity of the

Frost and Wood Binder

THIS is the Binder noted for its light draft—its sure, speedy cutting—its great strength—its ease of handling. But the greatest of all its assets is Reliability. This comes from long Frost & Wood experience in the development of the Binder. It comes from many stringent tests we give every F. & W. Binder before it goes to the customer. The Frost & Wood Binder has a big power wheel of special design, special roller bearings, special cutter bar, special non-failing knotter, special non-clogging elevator and other exclusive features too numerous to list here. Frost & Wood make the Binder you can buy and KNOW it will give you the field service you want in any emergency.

Roller Bearings, Sure Tying, Easy Levers,
Swift Cutting, Light Draft, No Threshing,
Cuts any Crop, Special Rollers, No Chocking.

Write nearest Branch or Office for Frost & Wood Binder Book and see what a splendid machine it is.

THE FROST & WOOD CO., Limited,
Montreal, SMITH FALLS, St. John.

Treatment for Contagious Abortion In Cows.

Enquirer.—"Kindly inform me as to the carbolic acid treatment for contagious abortion among cows; also as to any other treatment recommended."

Answer—The carbolic acid treatment for contagious abortion consists of the daily administration for about two weeks, of one dram doses of the acid. The proportion of salt is immaterial, as the salt acts solely as a vehicle for the acid. It is usually given in the proportion of one dram of carbolic acid to one ounce of salt to each animal. At these doses there is no particular danger from poisoning provided each animal receives not more than the prescribed quantity. With three pounds of carbolic acid mixed with twenty-five pounds of salt, the dose would be one ounce to each animal.

The above treatment for contagious abortion has been extensively tried, but after carefully conducted trials with its use, it is impossible to accord to it any degree of special value.

Methylene blue has recently been introduced as a cure for this disease, and many encouragin reports have been made. The dose of the drug is from one to two teaspoonfuls, mixed with the feed, once a day, for a period of six weeks.

Up to the present the most approved means of dealing with contagious abortion is along the lines of disinfection and isolation. Isolate any suspected or aborting animal from pregnant cows and heifers. The stalls, floors and gutters should be thoroughly cleansed and disinfected. All bedding, litter and feed should be removed and burned, also the aborted foetus and its membrances. Cows, after aborting, should have their genital passages washed out at least once a day with a warm antiseptic or carbolic solution, or a corrosive sublimate solution one in three thousand.

All the contact pregnant females should have their hips, tails and external genitals washed thoroughly and often with the creolin solution. After aborting, cattle should be isolated for at least one month and not be permitted to run at pasture with other cattle until all discharges have ceased, as they may remain virulent and be a possible source of infection for several months. The bull, after each service, should have his sheath and penis disinfected with the above disinfectant solution.

Wet and Dry Spraying

Please tell me the advantage or otherwise of dry spraying of potatoes? —S. H.

Ans.—The attraction about dusting is thta it is less troublesome than liquid spraying, there being none of the heavy carting of water and preparation of solutions. All that is necessary is to buy the powder, fill the hopper, of the machine and set it going through the crop. When you have said this, however, you have said all that can be brought forward in favor of dusting. On the other hand, there are many objections. The work can only be done while the potato haulm is wet with de wor rain. Horse-drawn machines for distributing the powder over large areas are considerably more expensive than horse-drawn sprayers for liquids, while knapsack powder machines are short-lived and none too satisfactory in working. Another drawback to dusting is that the powder is more easily driven out of its course by wind than is a liquid spray. But the chief objection to dusting is that it is less effective against the disease than spraying. The Irish Departmetn of Agriculture has made this clear by field trials. Several of the proprietary powders were tried against a 2 per cent. Burgundy mixture (liquid.) The result at nearly every centre was a loss of between 1 and 2 tons per acre in sound potatoes where the crop was dusted instead of sprayed, whilst the proportion of diseased tubers was considerably increased. Altogether you will see that the advantage lies decidedly with liquid spraying.—E. M. B.

Wood-Waste from Saw-Mills as a Source of Potash.

In addition to the potash from hedge clippings and vegetable refuse, etc., the writer draws attention to the value of wood scraps, saw-dust and shavings, produced in enormous quantities in saw-mills. In localities where this wood waste is not saleable for other purposes it may with advantage be converted into ash and used as a potash manure. The flue dust from gas-producing plants may contain as much as 10 per cent of potash, thus possessing the same value as kainit.

Other analyses of the ash gave the following figures:—

	K2O per cent.
1. Coarse ash, combustion very complete	7.24
2. Coarse ash, combustion very complete	5.08
3. Flue dust, combustion very complete.....	9.11
4. Flue dust, combustion very complete	6.35
5. Flue dust, coarser than 3 and 4	5.89
Aferage	6.73

On the basis of the ordinary price of kainit, ashes with the above composition should be worth from $6 to $12 per ton; and since ash is almost purely a waste product there is good reason to suppose that it could compete with kainit even in normal times.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
Howard W. Corning, Cheggogin, Yarmouth Co., N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B
Jos. R. Taylor, Upper Dorchester, N. B.
John B. Barton, Welsford, N. B.

Ayrshire Oatt

C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
The S. H. White Co. Ltd., Forest Glen, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.
John A. Hughes, Petitcodiac, N. B.

Shorthorn Cattle.

Joseph E. Kinsman, Upper Canard, Kings Co N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.
Isaac Chipman & Son. Chipmans Corner, Kings Co., N. S.

Milking Shorthorns.

E. W. Heurtley, P. O. Sutherland's River, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
E. W. Heurtley, P. O. Sutherland's River, N. S.
Steward Bros., Murray River, R. R. No. 1, P. E. I.
J.W.Callbeck & Sons, Box 386, Summerside, P.E.I.
Boyd A. Wetmore, Bloomfield Station, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
The S. H. White Co. Ltd., Forest Glen, N. B.
A. A. McBeath, Marshfield, P. E. I.
Wm. A, Churchill, Lakeside. Yarmouth Co., N.B
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Thos. W. Prowse, Union Road, P. E. I.
W. H. Moore, Scotch Lake N.B.
Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BARRED PLYMOUTH ROCKS

We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

CLEARANCE SALE OF POULTRY

Dark Cornish Pairs, $2.00; trios, $3.00. S. C. Buff Leghorn Cockerel or Silver Campine Cockerel, $1.50 each. Utility S. C. Red Cock, $1 50. Utility R. C. Red Cock, $1.50. 1st Amherst Cock, R. C. Red, $15. 3rd Amherst Cock, R. C. Red, $10.00, also one yearling R. C. Red Cock, $5.00 Have no young stock for sale. Will buy a few dozen hens, any breed.

GEO. H. SEAMAN,
Box 325. Moncton, N. B.

FOR SALE

5 trios S. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5.00 per trio. 2 trios R. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5.00 per trio. Also 1 pure bred Shorthorn Bull Calf, 5 months old.

Write for particulars to

W. H. Henry, - Shubenacadie, N. S.

IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARITIME FARMER.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

VALLEY FARM HOLSTEIN OFFERING—One pure bred Bull, dropped last February, also one Heifer Calf, three weeks old.—W. G. CAMPBELL, Salisbury, N. B.

JERSEYS, A. J. C. C. REGISTRATION FOR SALE.—Bull, 7 months; two heifers, 14 and 16. Prices reasonable.—J. F. HALL, Lunenburg, N. S.

FOR SALE.—Bronze Turkeys, large, healthy birds of Bell strain, bred from prize winners. Toms, $7.00; hens, $4.00. Only a few left.—HOTEL DIEU FARM, Chatham, N. B.

MAN OR WOMEN WANTED to distribute War literature. $120. for Sixty Days work in your own community. Spare time may be used. Winston Co. Limited, Toronto.

YOUNG PIGS FOR SALE.—Purebred Berkshires, registered; Purebred Yorkshires, but not registered. Also Berkshires and Yorkshires crossed.—R. O'LEARY, Richibucto, N. B.

PURE BRED JERSEY COW.—I have for sale this cow of extra good butter and milk qualities. Freshens February 10th. For particulars by mail apply to C. FRED FAWCETT, Upper Sackville, N. B.

JERSEY BULLS of good type, ready for service, also Bull Calves, all from good producing stock. In Berkshires one Boar, 2 years old; one Sow and young Sows from 6 to 8 weeks.—J. R. SEMPLE, Tatamagouche, N. S., R. R. No. 1.

CANADIAN POULTRY REVIEW, 38th year of publication. Bigger and better than ever. Departments conducted by specialists. Fifty cents year, three years one dollar. Sample for the asking. 184 Adelaide St. West, Toronto, Ont.

"VOL-PEEK" MENDS pots, pans, buckets, boilers, graniteware, tin, aluminum, in two minutes, without tools. "Put it on with your finger," enough to mend 50 holes 25c, postpaid. Agents wanted everywhere.—H. NAGLE, Montreal.

WANTED.—Ladies to do plain and light sewing at home, whole or spare time; good pay; work sent any distance; charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

PURE HOLSTEIN BULL CALF (registered) FOR SALE—Age 3 months, nicely marked, weighed 115 lbs. at birth and now weighs nearly 300 lbs. Sire was twice Canadian National Champion. Dam winner of her class at St. John, 1914, and a big milker now in R. O. P. test. This combination of size, constitution and production makes this Bull Calf a sure herd improver. Apply J. H. STOCKTON, Bull's Creek Farm, Woodstock, N. B.

FREE, to stockmen and poultrymen our 32 page illustrated booklet on feeding; how to construct a house which will accomodate 100 hens; gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies. Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry foods and remedies.—THE W. A. JENKINS MFG. CO., London, Canada.

Fall Clearing Out Sale

First prize Registered Holstein Bull over two years old, $100.

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1.25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

Bargains in Ayrshires

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

Try an Ad in the FARMER

Percheron Stallion

GLENEUR

FOR SALE !

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

Wm. Jamieson, - - Sussex Corner, N. B.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls. 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

THE NOVA SCOTIA FARMERS' ASSOCIATION WILL MEET FOR ANNUAL CONVENTION AT WINDSOR, N.S.

On January 25, 26 and 27th —Opening on Tuesday Evening, 25th.

An interesting program is being prepared, and profitable discussions are anticipated.

Ask your station agent for single first class ticket to Windsor and Standard Certificate.

C. R. B. BRYAN, SECTY.
TRURO, N.S.

Guernseys !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

SUCCESSFUL DAIRYMEN have found that it pays to dehorn their cows. Drovers pay more when they are dehorned, and shippers are insisting on having cattle dehorned. The KEYSTONE DEHORNER is the most effective instrument for the purpose Write for booklet. R H. McKENNA, 219 Robert Street, Toronto.

Butter Parchment at Farmer Office, Sussex

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, FEBRUUARY 8, 1916. Number 9.

Twelfth Annual Convention of the N. S. Farmers Association

The twentieth annual convention of the Nova Scotia Farmers' Association held at Windsor on the 25th, 26th and 27th January, while not so great in point of numbers as some of its predecessors, was a good representation of the best farmers of the province. Delegates were present from the best farming sections, from Margaree in the northeast to Yarmouth in the south-west. The work accomplished compared favorably, if it did not excell that done at former conventions.

President A. S. McMillan called the first session to order at 7:30 on Tuesday evening. There was not a single wrangle at any one of the sessions. Parliamentary rules were closely followed and there was no useless waste of time in talking against time. The slate was cleaned off at every session and when the closing hour had arrived the work scheduled on the programme had been completed.

At the opening session, with the president on the platform: Mayor Roach, of Windsor, who gave the delegates a hearty welcome to his town; W. Kerr Dimmock, municipal clerk for West Hants, who welcomed the delegates to his county; Dr. Reid, M.P.P.; Prof. M. Cumming, Prof. Cunningham, and the officers of the Association.

In the absence of the secretary, C. R. B. Bryan, who was called away owing to the illness of his son, R. J. Messenger, first vice-president of the Association, was appointed secretary pro tem.

Messrs. R. J. Messenger and Wm. Murray, the first and second vice-presidents of the Association, replied to the address of welcome.

Several Windsor ladies and gentlemen entertained the convention very pleasantly between addresses with splendidly rendered solos and quartette selections.

The President's Address

To the Officers and Members of The Nova Scotia Farmers' Association:

Gentlemen:

As your President, it is my duty, as well as a great pleasure for me, to welcome you to this Twentieth Annual Convention of the Nova Scotia Farmers' Association, which is being held this year in the historic town—Windsor.

Before taking up the duties that devolve upon us, as members of this Association, we would return thanks to our gracious God for the many blessings we have enjoyed during the past year.

When we last met in annual convention we little thought that at the close of another year's work we would meet again with the dark war clouds still hanging over us; in many of our farm homes there is the vacant chair, and the loved one that could ill be spared gone to serve his King and Country; one of our Directors, elected last year, Rev. Miles Tompkins of Antigonish, is now serving his Country on the other side of the water; another member of this Association, who for a number of years, has been a conspicuous figure on the floors of our conventions, is serving his country at the front; and still the call comes for "more men," and undoubtedly many more of our boys will feel it their duty to answer the "Call," and if necessary, make the supreme sacrifice in defence of those principles for which our Empire stands, which mean so much to free-born Canadians.

The season of 1915 will be notable for the fact that Nova Scotia produced the largest hay crop in her history; all over the province the hay crop was above the average; clover grew in abundance; in fact, the growth of this plant was almost phenomenal; fields on which not a single plant grew in 1914 had an abundant crop. This fact alone, is bound to have a good effect on our field crops for the next year or two.

On the other hand, our grain and root crops were below the average—particularly roots and vegetables. This is also true of the apple crop. The farmer who specialized in any of these crops last year will, undoubtedly, begin this year with a deficit. To my mind, this season demonstrated the fact that mixed farming is the most profitable in this province.

Dairying has during the past year made greater progress than any other branch of farming; in fact, the advances made by this industry during the last few years have been so remarkable that it is hard to realize what has been done. If we continue to advance within the next ten years as far as we did in the last, we will surely become the "Denmark of America."

Now that the dairy industry is on a solid footing, it is in a position to take care of itself, it seems to me fitting that something should be done to stimulate beef raising. We are making no progress along this line; we have, in this province, many districts far removed from lines of railway and steam-boat communication where creameries cannot be profitably operated that are well adapted to beef raising, and if anything further can be done to stimulate or encourage this branch of farming in our outlying districts, I feel sure it would be appreciated. I am well aware that we cannot compete with Ontario and the western provinces in beef raising, but we should surely be able to raise sufficient for "home consumption."

The prices paid for cattle, sheep, lambs and wool, and in fact, all kinds of farm products reached the high water mark during the past year; the only exception being horses; the market for them being very dull—due, no doubt, to the fact that the lumbed operators are doing very little work, and that public works are nearly all closed down.

Our Exhibition at Halifax was, with the possible exception of roots and vegetables, up to the usual standard. The Maritime Winter Fair in many departments was, undoubtedly, the best ever held. Our county exhibitions were also very good—and, judging form the quality of exhibits shown at many of them, marked progress is being made.

Our Agricultural College, under the efficient management of Principal Cummings and his capable staff, is still forging ahead. One of the chief events of the past year being the completion and opening of the new Science Building on the College grounds. It should be a source of gratification to us all that our Federal and Provincial Governments are working hand in hand to promote the interests of the farmer and the erection of this magnificent new building will ever stand as a monument to their co-operation.

Besides the regular short courses held at the College, a number of short courses were held at several centres throughout the province. The attendance at these courses and the interest taken in them, proves the wisdom and fore-sight shown in the establishing of these courses.

I cannot pass on without referring to the work of Miss Fraser, superintendent of Women's Institutes. The success of her work may be judged by the large number of women who attended the short course recently held at Truro. The education of farmers' wives and daughters along this line will do much to improve the "social conditions" in our rural communities. With the education of our sons and daughters will come the realization of the dignity of their calling. This, with the prosperous condition of our farmers, our free rural mail delivery, and our rural telephone service, should do much toward making our farmers a "happy and contented people."

We started out to prepare for "last years' work" with bigger crops for 1915 as our motto; later on, this was supplemented wtih the slogan—Patriotism and Production; to the campaign inaugurated under these mottoes we are indebted for our increased acreage in this province in 1915. Then let us ask ourselves the question: "If Patriotism and Production were a suitable motto for last year, what should our slogan for 1916 be?" It appears to me that we might well adopt as our motto for this year: "More Patriotism and Greater Production." More patriotism because our Empire needs every man who can be spared to enlist for service with King and Country. Greater production because for every extra dollar we succeed in wresting from Mother Earth, our Empire will have one more dollar to spend in bringing the war to a speedy termination, and we will have one more dollar to contribute toward that end.

Let us, therefore, begin this year with optimism born of faith in the justice of our Empire's cause—determined to do everything within our power to assist our Empire in her hour of need; determined to make this year the most successful in the history of our province; determined to raise bigger and better crops this year than ever before; determined to keep ever before us as our motto "More Patriotism and Greater Production"; and we trust and believe that before we meet again in annual convention our Empire will have emerged from the present struggle triumphantly.

Report of Directors, 1915.

Since the Nova Scotia Farmers Association met in convention, one more year has been added to the past and has become a page in history, and in the futuer wil loften be looked back upon as the year in which our Empire's patriotism and strength was brought to the test. Last year our Slogan was Patriotism and Production; Patriotism of this Canada of ours, the other colonies and the Mother Country has been proved and not found wanting; Production has been answered by a record from the farms of Canada, and the farmers of this province showed their worth, they did their bit though the seasons were unfavorable. Our boys have been in the trenches a year and have demonstrated the stuff they are made of, and they are likely to be there for some time and though we have no doubts as to the eventual outcome we must continue sending help and food, and following our calling as producers of food, it becomes our duty ot see that every effort is put forward in that direction. They expect it of us and we must not fail them.

After the close of this meeting, when discussions on the several subjects have taken place and personal conversations on like matters are through, and you return to your farms, it will devolve upon you to see if you cannot do somewhat better than last year, if not, you will make no advance, no advance is really a step backwards, this we know you will not do.

The program consists of subjects your committee think will be well to discuss, and as usual no doubt others will be brought before the meetings and we ask you to give them your best attention.

The question of widening the scope

of Agricultural Societies and County Farmers Associations into co-operative bodies we ask you to thoughtfully consider and also how best to make the County Farmers Associations of more practical benefit.

The Stallion Enrollment and Inspection Act was placed on the statutes of Nova Scotia at your suggestion, but there are weak links in it that need strengthening, and a place is on the program for duscussion upon this question.

The Provincial Exhibition was held at Halifax last year, the gentlemen whom you nominated as your representative upon the Commission will report in a few minutes.

Again we have to congratulate the Maritime Stock Breeders Association upon the successful Horse Show held in April and the Winter Fair held in December. We all know that the population in these Maritime Provinces is too small and scattered to make these financially successful without a grant from the public funds, but the grant is wisely made considering the eduactional feature which permeates through the country, not to say anything of the improvement in stock year by year. We regres that under circumstances necessitated by the war a Horse Show cannot be held this year.

We as an association representing the agricultural interests of this province should record our appreciation of the support given to agriculture by both the Dominion and Provincial Governments, we cannot enumerate them all but the grant of $68,000 under the Dominion Agricultural Instruction Act stands out as one, and under the Provincial Department of Agriculture has been spent with great benefit to the province. The new Science building built by the province at the College at Truro, at a cost of over $100,000 has been completed, was opened by Dr. C. C. James on the 11th inst., and is being used. This will greatly add to the efficiency of that Institution we are all so proud of.

Dairying still continues to forge ahead, the Creamery built at Baddeck by the Provincial Government is proving very successful and it has warranted them building another this past year at Margaree which promises to be just as successful. The Nova Scotia Dairymen's Association formed a year or two ago is doing good work, they held a very successful convention a few weeks' ago and have set out to do still better.

The Provincial Government also made a grant towards encouraging the growing of wheat and cereals, and better facilities for getting it ground for home consumption. A flour and oatmeal mill has been erected in Cape Breton and elsewhere aid given. These are in addition to the annual grant for the encouragement of agriculture.

We must ont forget to congratulate the Women's Institutes of the province which under the directorship of Miss Jennie A. Fraser, are increasing rapidly, upon the work they have done and are doing in these times towards alleviating the sufferings of those at the front, over $7,000 raised by the Women's Institutes in Nova Scotia for Ambulences is one item of their noble work. They held a largely attended convention at Truro a week or two ago.

In conclusion we need not again urge you to continue every effort to do your best to support the Empire in her struggle in championing freedom, we know you will remember that this present year will need more effort than last to supply the food on account of the withdrawal of so many brave tillers of the soil from the soil into the ranks. But this is a fact we would have you all realize and live up to, the call for bigger crops is still the Slogan only more so.

Directors—Walter Churchill, Samuel Freeman, Wallace Rhodenizer, John McQueen.

Exhibition Commissioners' Report

To the Officers and members of the Nova Scotia Farmers' Association, 1916:

Your representative on the board of commisisoners of the Nova Scotia Provincial Exhibition herewith submit for your consideration the following report:

We are pleased to be able to state that notwithstanding several serious disadvantages we have been successful in carrying out an exhibition which in many lines compared very favorably with any held in the past.

Some of these disadvantages might be mentioned here so that you may be in a better position to more fully appreciate the conditions under which we were placed.

The date at which the exhibition is held is having a very marked effect on the horticultural and agricultural departments; and more particularly this year as you all know the season this year was much later for seeding than usual. The advancement of crops show consequently at show time it was difficult to get exhibits up to the state of maturity required to make a first class showing. However, we are pleased to find that the exhibitors met the situation and to a wonderful degree overcame the obstacles in the way and the result was most satisfactory. (We are not putting this forward as a criticism of the date as this is an open question and considering the exhibition in all its aspects, we could hardly say whether or not a later date would be any advantage.)

We would also mention another disadvantage in the opposition of the City of Halifax as represented by their Board of Trade and Board of Controllers as well as the city commissioners to the holding of an exhibition at all. This opopsition assumed considerable proportions and required a corresponding amount of attention on the part of the commissioners from outside the city to overcome it.

The different departments of live stock were well represented and although a few classes may have been slightly deficient yet on the whole we consider the live stock the best showing ever made in Halifax.

The dairy department showed exhibits of superior quality and reflects great credit on the part of the exhibitors. We were pleased to find the different creameries of the Maritime Provinces well represented but as there still is and always will be a large amount of home dairying done we would like to see more competition in this line and all possible encouragement given it.

In the speed department all the contests were carried out to the satisfaction of all concerned and the general verdict is that it was the best race meet yet.

The other departments were about as usual, the Mines and Fisheries showing considerable improvement over 1913.

The financial statement for the year 1915 showed an expenditure of $34,276.71; receipts, $29,381.42; balance expenditure over receipts, $4,895.29.

This financial showing is considerably better than we dared to expect and we feel that it should be satisfactory to all concerned.

In conclusion we wish to express our gratefulness to the exhibitors for the manner in which they responded, and also to all others who in any way helped to make our provincial exhibition the success that it proved to be, more particularly in a year like this when so many tried to discourage us by predicting certain and absolute failure. We don't feel that the exhibition is above criticism and would welcome it but nothwithstanding any faults, it may have, it is certainly doing an educative work which could not be done otherwise for the same expenditure.

In presenting this brief report we ask you to give the exhibition your fullest consideration. Discuss it thoroughly, as there is no way in which faults will be brought to the notice of managers and thereby corrected and improvements made as by honest, straightforward discussion.

Thanking you for the confidence placed in us and hoping we may have proved ourselves worthy of it, we hereby submit the above report.

H. S. KENNEDY,
F. W. FOSTER,
Commissioners.

Balance Sheet, 1915.

Cr.

Balance January 1st	$ 249.32
Government Grant	1,000.00
Delegates' Fees	99.00
Membership Fees	15.50
	$1,363.82
Annual Meeting Expenses	$ 770.70
Directors' Expenses	11.40
Secretary's Salary	150.00
Legislative Com. Expenses	37.50
Postage, Telegrams, etc	10.13
Stationery, Printing	13.55
Balance, December 31, 1915	370.49
	$1,363.82

Resolutions

Following are the resolutions and the action taken on same.

Resolved that section 8 of the By-Laws and Constitution of the Nova Scotia Farmers' Association be amended by striking out in lines three and four of said section the words "one dollar and fifty cents" and substituting the words "two dollars."

Moved by D. F. McLean, seconded by Wallace Rhodenizer. Adopted.

* * *

Whereas experiments conducted in Nova Scotia have proved that an application of 2 to 4 tons per acre of ground limestone has markedly increased the yields especially of clover, the growth of which crop is essential to permanent fertility and the consequent bigger production from the farms of the province and,

Whereas a great obstacle to the free use of this limestone is the large amount of freight that is now paid on the amount of limestone used per acre and,

Whereas a consideration of similar facts has lead to substantial reductions of freight rates on this limestone in the United States,

Therefore, resolved that this Nova Scotia Farmers' Association do respectfuly urge the railway and steamboat corporations operating in the province to transport this limestone for agricultural purposes at especially reduced rates.

Moved by Rev. Gordon T. Lewis, seconded by Walter Churchill.

This resolution was referred to the resolution committee who recommended that a committee be appointed to take this matter up with the different transportation companies.

Adopted and Prof. Cumming appointed committee to act on the recommendation of the resolution committee.

* * *

Whereas the farmers of Canada have been called upon for an increased production of farm crops and,

Whereas the judicious use of commercial fertilizers is imperative to the farmers of Nova Scotia, being the raw material necessary for the successful production of his crops,

Therefore, resolved that this, the Nova Scotia Farmers' Association now in session at Windsor respectfully petition the government of Canada to remove the duties on commercial fertilizers. —F. W. Bishop, R. M. Jackson.

Adopted and placed in the hands of the legislative committee and Prof. Cumming.

* * *

Whereas, the annual exhibition held at Halifax is intended first of all to be an agricultural and industrial exhibition, and as such, with educational features which could be adopted would commend itself to the people of the province at large and,

Whereas, the show last year, 1915, was absorbed largely by a low class vaudeville show which could not commend itself to the right thinking people of the province.

Therefore, resolved that this Nova Scotia Farmers' Association strongly protest against the presence of the fakir element at any exhibition in the future.—John A. Scott, Wm. O'Brien. Adopted.

* * *

To the Legislative Council of Nova Scotia:

Whereas your honorable body have been enacting laws to improve the horse stock of the province of Nova Scotia, and

Whereas the Stallion Law as it at present stands is not effective enough owing to the large number of grade and unsound stallions offering for service;

Therefore, we ask your honorable body to add a clause to the present stallion law doing away with all grade and unsound stallions before January 1, 1918.

We would also ask to have an inspector appointed at once for the purpose of enforcing the stallion law as it stands at present,

* * *

A committee appointed to consider the question of co-operation for the farmers of Nova Scotia brought in the following recommendation which was adopted unanimously:

This committee reports first that they would recommend the act of 1908, Chapter 33, as the basis for co-operative organization. Second—That a comittee of three be appointed by our directorate to take up the matter of organization and to appoint or recommend an organizer and at the same time to find if the United Fruit Companies would permit such new organizations to become subsidiary to them.

* * *

This association regrets that the government did not favorably consider the strong resolution passed at our last session asking that the Nova Scotia Temperance Act apply to the City of Halifax, at least during the war.

We further place ourselves on record strongly favoring the cancellation of liquor licenses in Halifax, March 16, 1916. We respectfully ask the provincial government to take immediate action.—John A. Scott, G. W. Spurr. Carried.

* * *

Whereas, the menace of allowing grade or scrub bulls to be used for service has been for many years acknowledged by the best farmers of Nova Scotia.

Therefore, be it resolved that we recommend that steps be taken to obtain such legislation as will remove this menace and to this end that a uniformly worded petition in blank be sent to each agricultural society in the province with the request that the members sign their names and return to the committee appointed for such purpose.—R. J. Messenger, Wm. Murray.

Adopted, and the following petition in blank authorized to be send to each agricultural society in the province for the signature of the membesr:

Petition

—We, the members of Agricultural Society respectfully request that legislation be enacted to prohibit the use for public service of grade or mongrel bulls within the limits of Agricultural Societies and Live Stock Associations, or wherever pure bred bulls are otherwise available, for public service, at reasonable fees, in the province of Nova Scotia.

(Continued on Page 279).

A FLASH LIGHT PHOTO OF THE NOVA SCOTIA FRUIT GROWERS' ASSOCIATION.

Front Row, Left to Right.—A. E. McMahon, ex-President; George E. Saunders, Dominion Entomologist, in charge of Laboratory at Annapolis Royal; W. Saxby Blair, Supt. Experimental Station, Kentville; F. A. Chipman, President; E. H. Johnson, Director; M. K. Ells, Secretary; F. W. Foster, Assistant Secretary; A. S. Banks, Director; Miss Fielding, Official Stenographer, appears at the left. Two of the fathers of the Association, Messrs. W. S. Spurr and R. W. Starr, are in the second row respectively, behind Messrs. Saunders and Blair. John Donaldson, President of the United Fruit Companies, is on the extreme right, third row back. Dr. Cutten, of Acadia University, is third from the right in the third row.

Education for Country Life.

An address given at the Teachers' Short Course, Sussex, N.B., January 5. 1916, by S. B. McCready, Rural Science Department, Prince of Wales College. Charlottetown.

As teachers beginning the New Year in a special preparation for a special service in country life betterment, I wish to place before you a few things, the consideration of which may make your work in the class room more effective or your influence as a practical education reformer, the greater in your community. For, note this—that the winning of people in the country to new ideas about education will always depend very largely on what is presented to them through their children in the plain, everyday teaching of the not plain but attractive, everyday teachers like yourselves. Don't forget that it is upon what you do, not upon what some other person thinks, that the world's progress depends. Only what you put into effect of this course will count in solving the problem in New Brunswick of adjusting education to meet the needs of country life. I wish you a Happy and Prosperous New Year in the new leaves you are turning over this week.

The Nation's Dependence on the Country.

Education for Country Life.—Let us examine our terms briefly. As teachers who aim to be educators—and the two are not always identical—what are we to strive for? Setting aside the responsibilities of the teachers office as they pertain to the child himself and to the child in relation to his home, what are the teacher's obligation to the state?

This new work that you are entering into is distinctly a civil service—a service for the state. You are participants in a Dominion-wide national educational movement. The money that is making this work possible has been voted by the repesentatives of the Canadian people at large in the Federal Parliament. You are chosen to put into practice New Brunswick's expression of a Canadian-felt need.

I do not need to specify that. Our last census, that of 1911, revealed it. Every intelligent Canadian appreciates it. Everywhere in Eastern Canada a serious depletion of rural population has been taking place. The substructure of our social fabric has been much undermined. The foundation stock on which the best in citizenship is built, at a time when its virility is most needed, has become attenuated. The industry most fundamental to stability and steady progress, has been threatened not from without, but from within. In these losses, New Brunswick has shared in a large measure.

New Brunswick's Possibilities

I have been told by responsible persons, whose judgment may well be trusted, that there is no part of Canada today where the possibilities in agriculture are greater than they are in New Brunswick. What does that mean? It means that there is a job worth working at right at our door. That there is something to be discovered right here which thousands and thousands of New Brunswickers went to find in the United States, in British Columbia and other far parts of the earth. That the population may be conserved. That wealth may be increased. That homes may be multiplied. That there may be a Greater New Brunswick than has been!

And how will this come about? Through Education largely. Through the schemes of education that we have hitherto followed? Hardly. But through the new kind of work that you and your successors will do in the schools in the next ten or twenty or thirty years.

The Farmer's Work Analyzed.

Let us look closely at a farmer's work. We need to know what is required of him in order to know how he may be served in education.

In the first place he is a Laborer; by the sweat of his brow he accomplishes much of his work; though with the advent of cleared land and labor-saving machinery much of the outward sweat is being replaced by internal sweat. But he must labor, and always will have to do hard work—and a good thing for the old world that there must always be hard work! He must not only hew wood and draw water; he must dig and trench, lift and haul, reap and sow, milkcows, clean stables, erect fences, plow and harrow, build and plain, work faithfully and steadily year in and year out.

In the second place he is an Agriculturist; he has the three fold work of tilling the soil, growing crops and raising animals.

As a tiller of the soil, he clears land, drains it, plows it, harrows it, cultivates it, fertilizes it. The soil is the source of all his wealth. If he abuses it, he suffers. If he does well by it, he benefits and the world at large benefits. If he leaves it better than he found it, he is a public benefactor and deserves well of posterity as a good citizen. If he leaves it poor and depleted, he has stolen from posterity; in ignorance, it may be, but New Brunswick is poorer for his having lived in it. His has not been the service of a patriot.

As a grower of crops, he sows and tends, harvests and threshes, cleans and sows again, or feeds and returns manure to the soil from which he took the crop. He grows grasses, grains, roots, vegetables, trees, fruits. He deals with plant life in a thousand forms. He has to wage a continual warfare against the enemies of these cultivated plants. Weeds and insects and diseases are entrenched in his fields and orchards or lined up ready for attacking him on all his boundaries. He must ever show skill and vigilance and endurance.

In preparation for the fight against

(Continued on Page 301.)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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FEBRUARY 8, 1916.

DATES OF ISSUE.

February	8-22
March	7-21
April	4-18
May	2-16
June	6-20

BUSINESS ABILITY APPLIED TO GREATER EXTENT WOULD RAISE FARM PRODUCTION.

A strong plea for greater care in farm management and for a more conscientious application of accepted farm principles which were common property was urged by Professor J. H. Grisdale, director of the Dominion Experimental Farms, in his address on "Farm Management," given at the Ottawa winter fair. This, Prof. Grisdale declared, would increase production by at least fifty per cent.

Farm management was farm business, he stated. The reason why the capitalist did not make good as a farmer, was because he did not have good managers. Farmers in general were not balancing labor and investment against the profit. The farmer must be careful of his investment, and not let sentiment an dsimilar influences distract him. He could point out a dozen farms where the scenery was fine, but that did not help the interest any; others, also, that the farmers' grandfathers had owned, but too much sentiment was not wise in that direction either.

The farmer fell down, besides, on working capital; many hate to put a little more money in as working capital into just a little better horses, implements, buildings, etc., though some believed that an adequate working capital was necessary and that money investment should not be overlooked for satisfactory returns.

"We must have a knowledge of farm values," said Prof. Grisdale. "This makes the farmer able to grasp the importance of the little things which are an indication of thrift, though it is a mistake to spend too much time on the little things, for farming is a big enterprise."

There should be the proper balance of farm livestock and crops. He liked to see just a little more livestock than the farm could carry rather than the other way, so that one could be sure that all the material would be used up, and a small investment to carry the balance would not hurt.

The right kind of livestock should be kept. The farmer who made a success must produce at low cost and utilize the feed for the greatest money earning possibilities.

Dealing at length with the cost of production, which, he said, was one of the most important problems in the country today, Prof. Grisdale first stated that all operations must be timely. "I believe honestly,' 'said the speaker, "that 25 per cent. of our farmers are not timely in their operations; either they don't know, or they procrastinate, for they fail to do the right thing at the right time."

Thoroughness was important; in fact, it was almost a negligible quantity on Canadian farms. Referring to what Mr. Leitch had said previously about not farming too intensively, Prof. Grisdale said there would be absolutely no fear of overdoing it "Until we learn to do better," he said, "we shall fall far short on crop production."

The question of power, meaning horses available, was often neglected or mismanaged. There should be four or five horses at least on a farm of 100 acres, for to be under-horsed meant to be under-cultivated. He gave some interesting observations on the cost of wintering horses, pointing out that, on one government farm this was being satisfactorily done on oat straw and a handful of grain while on some other farms the cost was several times greater.

Big machines were valuable to bring about lower cost of production, and he advised that the next machines bought by his aduitors be large ones. A large seeder, for instance, would cut the cost of seeding almost in two.

One of the most important of details in farm management was to have a system of some kind with regard to crops. This was so much a fad of his that he would refrain from discussing it at length, except to say that the man who did not follow a good retation would get only one-half or two-thirds of the crops he ought to have.

Winter work was important, for there were many odds and ends that should be attended to, which were too often overlooked.

The market was worthy of deep and close study. It was not sufficient to simply operate as their fathers had done; farmers must become more thorough business men. He could point to a place not 200 miles from Ottawa where the capital invested in a farm amounted to hundreds of thousands, and where large profit had been made this past year.

Co-operation would be found most advantageous in many ways, continued Prof. Grisdale, for it was a good way to obtain large returns, besides paving the way to the introduction of the large machine. Co-operation could be practised in working, buying and selling, and would do much to increase the chances of profitable returns. It was true that returns were pitifully small, on the average in Canada, and they were still smaller in the United States, according to government bulletins.

Dealing with the question of money crops, he said that it was not necessary that everything grown on the farm must be consumed on the farm. On almost every farm there was some possibility along this line, and to have some small thing for sale at different times of the year was very acceptable indeed.

"Concluding," Prof. Grisdale said, "the whole thing practically is that, if we would make the most out of farming operations, we must be prepared to use business ability to a much greater extent. I am not strong for an extensive system of bookkeeping, though I have seen lots of systems and had them submitted to me for purchase by the government or for recommending to the farmers. I have yet to see any system that would justify any great expense. Keep books simply, and have a knowledge of costs, etc. Most of the losses on farms result from not knowing where we are at, and there is scarcely a farmer that is not doing something at a loss and does not know it. The requirement is thought; we must think to make anything go, and especially farming."

BOOZE AND THE SHEEP BUSINESS.

Commenting on the fact that five western sheep states have gone dry, the American Sheep Breeder, of Chicago, makes this original and unique proposition to those of its readers wno work in the sheep folds for wages:

"Pledge us your word of honor that you will cut out booze for twelve months and you may have the American Sheep Breeder free of charge for one year. This is our treat, boys. Who will be the first to accept it?"

"The Breeder goes on to say that "the elimination of booze means better flock masters, better shepherds, better ranchers, better sheep, better wool, better mutton, better husbands, better fathers, better brothers, better sweethearts, better towns, lower taxes, less crime, fewer lunatics and paupers, and a richer and happier people in every way."

SUCCESS FOLLOWED MISTAKES.

There is but one highway open to real success, and this is persistent, consistent and intelligent application to something is that worth while. A very successful dairyman, over sixty years of age, recently said: "I have made the greater part of my money since I was forty-five. Up to that time I was principally engaged in making mistakes. I was following the example of my neighbors, who were not real thinking dairymen. Then I struck out for myself, and I have been correcting a host of mistaken notions about cows, stables, feed and farming in general. The difficulty with many dairymen is, they never wake up.

An old farmer who kept up the fertility of his farm was asked how he did it. His answer was right to the poitn: "I always plow something under." He fed his land humus-making material. Either it was a good dressing of manure, a crop of rye grown for that special purpose, or something else. He had been frequently known to plow under a good second crop of clover contrary to the ideas of his neighbors who would save it for hay. But this old man kept growing bigger and bigger crops because he held steadily to the rule to always "plow under something."

Science and practice, helped by experience, that is what we want. Experience means that which we have ourselves learnt; that which has been knocked into us so forcibly is never forgotten. This is why we have often advocated that "every farmer should be his own experimenter."

A farmer recently told of a new malady with which city folks are occasionally afflicted. It is called "Farmonomania." Dictionaries today do not include the term, though coming editions must do so. It will be defined as a fantastic brain storm on rural economics.

NOVA SCOTIA INSTITUTES

The Annual Short Course for women and the Third Annual Convention of Women's Institutes held in the new Science Building at the Agricultural College in Truro this year were more interesting in many ways than any that have preceeded. The Short Course was for the first time given in a suitable building, suitably equipped. This building occupies a prominent site on the College campus and is a massive structure of grey stone and brick. The second floor of this fine new building is devoted exclusively to the interest of women in Nova Scotia, and perhaps a short description of it will be interesting to your readers. To your left as you come up the stair is a large lecture or Assembly Hall, splendidly lighted by day or night which will seat about five hundred people. The seats used are oak settees with broad arms capable of holding a note book so that one may take notes with comfort and with convenience. This hall is provided with equipment suitable for demonstrations in cooking, etc. Just next to it is a library and across the hall cloak rooms and an up-to-date lavatory. The room of most interest, however, with its long tables covered with shining aluminum and fairly bristling with drawers and cupboards, a peep into any one of which will make the heart of a housewife glad, equipped as they are, most thoroughly, with all the tools necessary for the trade of housekeeping. Especially comfortable chairs with one broad arm for note taking are provided. A laudnry class room is only divided from this room by pillars and the chairs of the cooking class room are available therefore for lectures in laundry work. An office, closets and pantry complete this floor, which without doubt is one of the best in the Maritime Provinces for the teaching of Household Science. The walls are in brown and buff and the woodwork in oak, this color scheme being particularly attractive and very restful.

The classes this year were especially well attended, and great enthusiasm was evinced by the pupils, whose ages ranged from a small girl in short frocks to a dear old grandmother who was glad to know of some new cookies to make for her two sturdy little grandsons. It was interesting to see mother and daughter working side by side and to note the delight of experienced housewives when their pastry and doughnuts turned out exceedingly light and undoubted successes. "What indigestible stuff to have taught at a Short Course at a Science Building!" some one will be sure to say. Very true, but as long as the human race exists, it will insist (especially the male portion of it) on eating pies and doughnuts, so it is just as well to know how to make them properly so that the pangs of indigestion may be somewhat lessened. Thus along with many other more valuable things, these were also taught, and to tell the plain, unvarnished truth the two lessons on Pastry and Deep Fat Frying were the two in the course that aroused the greatest interest among the pupils.

There is no doubt that many hints are given at one of these Short Courses as to proper combinations of food, proper preparation, proper cooking and the nutritive value of foods, etc. But in a fortnight only the merest outlines of the subject can be touched upon and there are so many other allied subjects that must stand aside and still are quite as important, that the question of longer and more effective courses comes up. With improved facilities it is hoped to solve this question satisfactorily and to place before the women and girls of the province a four to six weeks course, combining practice and theory in an efficient and attractive manner. A course of this kind takes not only time but money to carry out effectively, usually there is enough of the former but unfortunately the latter, which is most important, is something lacking, but remembering the good old adage, "Where there is a will there is a way," we trust that the way will be found.

The Third Annual Convention of Women's Institutes was held during the second week of the short course from Tuesday evening, January 11th to Thursday evening, January 13th, and was splendidly attended by a representative number of delegates from all over the Province. The opening meeting of the Convention was also the formal opening of the Science Building and Dr. C. C. James of Toronto, Agricultural Commissioner, gave the opening speech. The hall was packed to the doors, the crowd even overflowing to the first floor so eager were they to hear this talented speaker. The other speakers at this meeting were Premier Murray of Nova Scotia and Hon. J. A. Murray of New Brunswick and all were particularly good. Owing to the crowded condition of the hall the meeting adjourned to the Main Building, where an interesting musical programme was given through the kindness of the Truro Town Council. Day sessions of the Convention were given over to reports of the Institutes, business and a question box, with a very clever paper from Mrs. Wiltshire of Round Hill, a short address from Mrs. Stanfield, president of the Local Council of Women, Truro, and the Superintendent's report. The reports from the Institutes were listened to with great interest, as each delegate told of the splendid work that had been done by her Institute, not only for local affairs, but for the many forms of patriotic work. Wednesday afternoon the delegates were entertained at a reception by the Executive of the Local Council of Women, at the residence of Mrs. P. McG Archibald, Vice-President of that Society. It was a most enjoyable occasion and the delegates were very grateful for this opportunity of meeting one another. Wednesday evening the delegates had the pleasure of listening to Mrs. F. H. Sexton, of Halifax, lecture on Red Cross. Mrs. Sexton is without doubt the foremost woman speaker in Nova Scotia and given a subject as full of interest as Red Cross, it can be imagined the lecture was exceedingly good. The closing meeting was addressed by Rev. J. Macartney Wilson, of New Glasgow, who had just returned from a three months' sojourn in France, where he has been engaged in Y. M. C. A. work among the soldiers. His

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Twelfth Annual Convention N. S. Farmers' Association

(Continued from Page 276).

Officers for 1916.

The election of officers resulted as follows:

President—R. J. Messenger, Bridgetown.

1st Vice-President—Wm. Murray, Westville.

2nd Vice-President—Samuel Freeman, Amherst.

Directors—H. A. Moffat, Grove's Point; Walter Churchill, Yarmouth; Ronald Chisholm, Antigonish; C. A. Maxwell, Mount Thom.

Secretary-treasurer—C. R. B. Bryan.

Exhibition commissioners—H. S. Kennedy, Stellarton, F. W. Foster, Kingston.

Auditors—Profs. J. M. Trueman and J. P. Landry, Truro.

Legislative committee. — William O'Brien, Windsor Forks, W. W. Black, Amherst.

Co-operation organization committee —A. S. McMillan, Antigonish; Wallace Rhodenizer, Bridgewater, and H. S. Shaw, Berwick.

"Methods of Improving the Potato Crop," was the subject of an instructive address by Prof. G. C. Cunningham, Dominion Plant Pathologist, for New Brunswick, after the various addresses of welcome and replies thereto had been made at the opening session.

Prof. Cunningham gave figures showing the total acreage and total production of potatoes in the respective eastern provinces of Canada which showed that the average yield per acre was very low when compared with the high production per acre secured by farmers who pay particular attention to the essential detail connected with the growing of this important crop.

The first essential for a large yield is that the soil be well prepared and well fertilized. The second essential, good seed, preferably procured from the highest yielding hills at digging time. The speaker thought it as necessary for a farmer to know the producing records of the various strains of potatoes grown by him as it is for him to know his live stock records. The seeds for a high average yield crop must be good at the start, free from disease and the farmer must take good care of it. He then went on to deal with the question of prevalent potato diseases and how to combat them. Spraying with Bordeaux mixture five or six times in the course of the season was, other conditions being right, a sure insurance against low yields, even in seasons when neglected fields were total failures.

On Wednesday Afternoon

Dr. J. Sinclair, V.S., of the N.S.A.C., Truro, gave an excellent talk on Horses and their care and feed, from birth to maturity, also the care and feed for the in foal mare. He gave convincing figures that showed that while the average price for horses is low at present, horses of good breeding, well developed and well cared for bring remunerative prices.

R. S. Hamer, of the Live Stock Branch, Ottawa, followed with an interesting talk on "Market Problems of the Canadian Farmer."

"Limestone Experiments on the College Farm, Truro," and "Feeding Dairy Cattle" were the subjects of two instructive addresses by Prof. J. M. Trueman, of the N.S.A.C.

The use of ground limestone is a live question in the Maritime Provinces and naturally the experiments conducted by Prof. Trueman are being carefully followed by our most progressive farmers.

Prof. Trueman showed the clover crop gain in 1915 on two acres that had been treated with four tons of ground limestone at seeding time in 1914.

Size of Plot			Amount of hay: lbs.	Yield per acre tons.
1 acre	½	limed	3610	3.6
	½	unlimed	2550	2.5
1 acre	½	limed	3090	3.2
	½	unlimed	2570	2.6
½ acre	¾	limed	1490	3.0
	½	unlimed	1160	2.3
½ acre	½	limed	2010	4.0
	½	unlimed	1150	2.3
½ acre	½	unlimed		
	½	limed	3650	3.6
½ acre	½	limed	3050	3.1
	½	unlimed		

Crop, gain on two acres, limed: 1st cutting, 1.4 tons; second cutting, .8 tons. Total gain, 2.2 tons.

At the present price of hay the returns per acre from the results of the above experiment figures an increase of from $15.00 to $25.00 per acre on the first crop. Prof. Trueman explained that lime does not supply plant food and that it does best where there is a supply of humus. In reply to a question, Prof. Trueman said two tons of ground lime was equivalent to one ton of burnt lime. He also said most authorities recommend an application of two tons ground lime per acre.

Prof. Trueman's address on "Feeding the Dairy Cow" brought out an interesting discussion. The farmers were particularly interested in the possibilities of O. P. V. ensilage.

Prof. Cunningham's address on "How to Eradicate Club Root in Turnips and Cabbages" was followed with keen interest.

In explaining the appearance of club root, the speaker said the disease was caused by a microscopic organism that lives in the soil from year to year. He claimed the disease could be spread through the agency of seed, seedlings, soil, barnyard manure, farm implements and the horses' feet and men's boots while operating on the soil.

The best prevention is found in a long crop rotation, destruction of diseased roots, proper drainage and the application of lime at the rate of three tons per acre, air slaked or 5 to 6 tons crushed limestone.

He showed a chart of a field on which prior to liming, the whole cabbage crop had been a total failure owing to club root. Following the application of 150 bushels air-slaked lime the first crop showed 60% diseased plants. The second crop 1% diseases plants; and the third crop was free from disease.

Following the application of 150 bushels unslaked lime, the first crop was 96% diseased, the second crop 15% diseased, and the third crop free from disease.

Following an application of 150 bushels air slaked lime and 100 bushels unslaked lime, the first crop was 56% diseased, second crop and third crop disease free.

Following an applicatio nof 150 bushels air slaked lime the first crop was 85% diseased, second crop 10% diseased, and the third crop clean.

On the control plot where no lime was used the three crops were 100% diseased.

Professor Cunningham is confident that club root can be eradicated by the use of lime.

The question "Should Agricultural Societies and County Farmers' Associations become Co-operative Bodies for Buying and Selling Farm Supplies?" was discussed in a business-like way and before adjournment a committee consisting of A. S. Millan, Wallace Rhodenizer, and H. S. Shaw was appointed to carry on organization work and ascertain on what grounds the United Fruit Companies of Nova Scotia can be used as a central body.

Prior to closing votes of thanks were tendered to the retiring president, A. S. McMillan, and to Wm. O'Brien, for their active interest in furthering the work of the Association. Thanks were also extended to Mayor Roach and the citizens of Windsor for the use of the Hall and the very pleasant entertainment they furnished at the opening session. The meeting closed with the hearty singing of the National Anthem.

HORTICULTURE.

Degeneration of Potatoes.

To the Census and Statistics Monthly of October, 1914, (Vol. 7, No. 74, p. 251), a short note on change of seed was contributed by the Seed Commissioner of the Department of Agriculture in reply to an inquiry received by the Census and Statistics Office from one of its crop-reporting correspondents in the Province of Saskatchewan. The note had some reference to potatoes and especially to the desirableness, where the crop has been reduced in vigor by growth in a hot, dry, climate, of obtaining fresh seed from a cool, moist locality. The potato is however a plant possessing special characteristics of its own, and the following notes dealing more with the deterioration to which it is subject may be of interest in this issue of the Census and Statistics Monthly which contains other articles relating to potatoes.

The question of "degeneration" in potatoes is one that has attracted the attention of practical growers for a great number of years. From the frequent discussions of the subject I consider it reasonable to assume that a belief in the "degeneration of potatoes" is almost an article of the farmers' creed. Quite frequently poor crop yields, susceptibility to disease, and other effects of failure are excused as being due to "degeneration," "running out," "lack of vigor," etc.; these latter phrases, be it noted, being merely circumlocutions for an idea implied in the term "degeneration."

Though this concept of the word by the practical and even by the potato breeder is correct, the usage of the term itself apepars to, and does actually, involve a fatal misconception of the true inwardness of the term. Hereditary degeneration, i.e., a decline in the progeny due to pre-existent weakness of the parents, is well known, and many examples might be quoted from both the animal and plant kingdoms. In this phrase we imply parentage, and reflect upon the parents either male or female, or both. Let us then use a term, which I am not aware has hitherto been employed, viz., chromosomatic degeneration, as opposed to somatic deterioration, to which I shall presently refer.

Chromosomatic degeneration, or degeneration pure and simple, as we conceiv it, is the manifestation of a certain failing or decline transmtited from parents to offspring and perpetuated throughout subsequent generations, or even handed down in intensified ratio to them, until the stock becomes so greatly enfeebled that sterility put an end to the line. This effect is due to the transmission of inheritable degenerate characters by means of the chromosomes of the parent. These chromosomes are the small bodies in the male and female germ cells, which conjugate in sexual reproduction, and they may be regarded as the "vehicles" of latent or dominant characters both of the male and of the female parents. One example may suffice to interpret to the lay mind the bearing of this somewhat technical exposition. Alcoholism, especially in both parents, will invariably show up detrimentally in the children, and they, being likewise so afflicted, will in turn give rise to mentally and physically feeble progeny. The degenerative taint has been transmitted by the chromosomes of the parents.

Let us, therefore, clearly understand that degeneration is a term, which should properly be employed only where sexual reproduction plays a part; hence our use of the qualitative epithet chromosomatic, in order to define accurately the meaning of the loosely used word degeneration.

Now does sexula reproduction enter into the commercial growing of potatoes? No. People who claim that "degeneration" takes place in potatoes clearly confuse the proper significance of the term. Potato varieties originate in the first instance by sexual reproduction. A new variety of potato can only result from cross fertilization of parent plants, which are allowed to set seed, and from this seed the new variety is grown initially. Subsequently the tubers are vegetatively multiplied and perpetuated by their use as seed potatoes for planting. This vegetative mode of reproduction is essentially identical with the methods of raising plants from cuttings, or of perpetuating hyacinths or tulips, for instance, by means of bulbs, apple varieties through grafts, or roses by budding. When the breeder has raised his new variety, and considers it worthy of perpetuation, it has passed through a long series of improvements and selections, and is, ex hypothesi, superior at the start to the parents from which it is derived.

The question which now requires to be solved are these. Do these varieties deteriorate, and, if they do, how does deterioration show, and can it be remedied?

A plant almost exclusively reproduced by vegetative means, should not deteriorate; one cutting, one single tuber is just as good, or just as bad, as the plant from which it was taken. A thousand tubers from the same stock should grow in the same way as did the initial parent plant. Here a passing mention must be made of mutation, or the sudden change in some characteristic of an offspring from the corresponding feature in the parent—a phenomenon which has been observed in a number of instances. But the only instance known to us—Labergerie's famous mutation of a white variety into a variety known as Blue Giant, or something very similar—is not by any means authentic enough to be taken into serious consideration.

In so far as chromosomatic degeneration of potatoes is concerned, we know of no single instance, nor have we found any literature that contains authentic evidence in support of such a claim. Indeed one plant breeder of world-wide fame, Professor Fruwirth of Vienna, expresses a view on the subject, which clearly supports our own conception. He says: "True degeneration of a variety, which would manifest itself under uniformly favorable conditions, and when superior seed potatoes are used, has not been proved, and is improbable.

This author cautiously refers to the use of superior seed potatoes, which should be grown under uniformly suitable conditions. "Evidently, then, there is a "degeneration"—some adherents of the doctrine of "degeneration" will exclaim—"if one does not use superior seed potatoes, and raise them under suitable conditions!" A deterioration is just exactly what does happen, but it is no more due to degeneration proper (chromosomatic degeneration) than for the sake of argument, to mutation.

It is generally claimed by the practical grower that a variety of potatoes, if grown for a longer or shorter period in one particular locality, will eventually give decreased yields, and generally show signs of "degeneration," or "running out." We are able from experience to corroborate this deterioration, but, whenever we have carefully investigated the question, we have been able to prove that such behavior has been due to a variety of causes. There can be no doubt that certain localities, perhaps because of climatic or soil conditions, will more quickly affect the yielding capacity or vigor of a variety than other localities. Deterioration may also be due to the use for seed purposes of tubers originating in such localities. Indeed the experience of the Dominion Horticulturist at the Central Experimental Farm has shown that Ottawa is a typical locality which affects detrimentally the quality, vigor and type of potato varieties more quickly than has been found the case elsewhere.

The perpetuation of a variety in such unsuitable localities will graudally result in the production of an inferior type. But experience also shows that it is possible, by patient selection, and, above all, by growing these "varieties reduced in vigor" under more suitable conditions, for them to regain their prestine quality and vigor. Is this "regeneration"?

In view of the above explanations we do not consider such cases of loss of vigor in the light of true degeneration, but we have here evidence of a type of decline, which we are inclined to regard as somatic deterioration, as opposed to true or chromosomatic degeneration. Somatic deterioration refers to the decline in the cells of any individual body, or to what is generally, but loosely, spoken of by the practical grower as running out, strain weakness, or "degeneration." It is very distinct from chromosomatic degeneration, since it is not due to any parental imperfection, but is largely due to numerous conditions exerting influence upon the individual.

To use again an illustration, which may bring home to the lay mind an essential difference between this deterioration and degeneration, an analogous case in human life—and one due also to similar unfavorable climatic causes—occurs in the undermining of European constitutions through residence in tropical countries. Is the grower with his "degeneration of potatoes" sufficiently logical to dare to apply the term "degenerate" to, say, our warworn heroes invalided home with broken health incurred from exposure to the damp and cold of trench life in winter?

It must be realized then, that a potato plant grown under conditions of starvation will produce smaller tubers than one grown under the most favorable conditions; a tuber produced by the former plant—which tuber is merely a cutting—will produce a very superior yield, if it is grown under the most favorable conditions. Hence the apparent deterioration is not inherited, since a cutting has no true parent plant from which to inherit anything; but if will continue to behave as the plant of origin did, providing the climatic, cultural and other conditions are perfect.

We have mentioned above the decline of varieties due to unsuitable conditions. Continue growing plants under these conditions and you will gradually produce a weak plant offering no resistance to many kinds of disease, and these latter, then, will do the rest. The plant will eventually produce no yield to speak of, and farmers are satisfied that they have a case of "degeneration." We wish to strongly oppose this conception. It is most misleading, and the use of the term is in a fair way to become stereotyped and be used popularly. But it has on bearing upon the true state of affairs.

Farmers and potato growers have the remedy for deterioration in their own hands. It is beyond question that some localities in every country are more unsuitable for the growing of good potatoes than others. Where this is the case, growers are urgently advised to make a frequent change of seed. Preferably secure seed from a suitable locality every year, and then the grower will have no deterioration. By keeping one strain of potatoes in cultivation too long under any but the most perfect conditions the yields will be unsatisfactory, and diseases abundant. Even in localities where po-

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Just as the British Fleet dominates the World's waters, so "BRUCE'S SEEDS" are the dominant ones with the planter whose living depends upon "Real Seeds."

It will be even more apparent at this time, when many seeds are in short supply, that there will be more stocks offered by unreliable and inexperienced growers than in the past, and that houses with long established reliable connections such as we possess will have an incalculable advantage.

Why take a chance, when you can buy "The Best Seeds that Grow"—BRUCE'S—for very little more than so-called "cheap" seeds?

It costs as much to plant and care for poor seeds as good ones, and you have very meagre, unsatisfactory results to show in return for your labor.

CHEAP SEEDS ARE DEAR IF YOU GET THEM FOR NOTHING.

Send for our 128 page Catalogue of Seeds, Plants, Bulbs, Poultry Supplies and Garden Implements, full of valuable information, which is now ready and will be mailed FREE to all applicants.

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DO NOT BUY *a Bicycle, Sundries, Tires or Sporting Goods* until you receive our latest literature and special money-saving proposition.

TWO CENTS is all it will cost to send us a postal and we will mail Free, postpaid, a handsome Art Folder showing our complete line of Bicycles in large size actual colors; also Catalogue of Sundries, Tires and Sporting Goods. Do not wait. *Write to-day.*

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STRAWBERRY PLANTS!

Now is the time to book your orders for Strawberry Plants for the coming Spring. Prospects were never better for high prices for Strawberries than for the next few years. One acre of berries will pay as much net profit as ten acres of potatoes or fifty acres of hay. Make Strawberries part of your regular farm crops. If you cannot raise them commercially do not neglect a few hundred plants for the garden. We again offer for sale the old reliable Senator Dunlap, the earliest, best shipping, strongest growing, most drought and frost resistant berry grown in the Maritime Provinces. Our plants are known as "The Plants that Grow." Prices for Dunlaps $3.50 a thousand, in orders of five thousand or over, $3.25 a thousand.

Other varieties, Sample, Williams, Valeria, Longfellow, Arnout, etc.

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tatoes do normally well, it is advisable to practise selection of seed along recognized lines. This will eventually result in the production of heavier yields, and produce a strain that will be successful for a longer or shorter time elsewhere. No attempt should be made to grow seed potatoes in unsuitable localities.—By H. T. Gussow, Dominion Botanist, Central Experimental Farm, Ottawa.

Baldwin Spot.

The following quotation was taken from a letter recently received by the Maine Agricultural Experiment Station: "I am sending you, under sepatate cover, an apple covered with black specks; what do you call it When these aples were put in the cellar last fall, they looked perfect, but a lot of them are badly specked this spring. I am very anxious to eradicate this trouble and make my fruit as near perfect as I can."

The apple in question was affected by what is known as Baldwin spot, samples of which are quite frequently sent to the station, usually earlier in the season. Baldwin spot is so named because it was first observed on and occurs more commonly on the Baldwin, but it is by no means confined to this variety. Of the other kinds of apples affected by the disease, specimens of Greenings are perhaps more frequently received.

The trouble is characterized by brownish, and, in later stages, almost black, sunken spots or pits distributed irregularly over the surface of the apple. These are somewhat irregularly circular in shape, and vary in size from a sixteenth to nearly a fourth of an inch in diameter. In the earlies stages they have much the appearances of small bruises. When cut through, it is seen that the diseased tissue is somewhat hemispherical in shape, extending into the apple. This affected area is light brown in color, and has a distinctly spongy appearance, particularly if examined by the aid of a small hand magnifier.

In later stages the tissues beneath the spots dry out and become shrunken so that the pitting is deeper and quite marked. In later stages, also, the interior tissues of the fruit may show a browning in certain regions.

Frequently the Baldwin spot appears on apples as they are ripening, but in other instances it develops in storage. Usually, however, in storage it makes its apeparance in the early winter or fall. The disease may be confined to individual trees in an orchard or to certain branches of individual trees. Baldwin spot appears to be widely distributed in this and other countries, and although students of plant pathology in various sections have given it considerable attention, no definite proof has been obtained that it is caused by a parasite or can be controlled by spraying. There is some evidence for believing that it is in some way associated with defects in nutrition or lack of balance in the food supply. Just what is the prime cause of the trouble in individual instances is usually difficult to locate. Frequently where it appears on orchards in sod, it disappears when these are well fertilized and brought under a good system of cultivation.

Undoubtedly, Baldwin spot has been at times confused with another, somewhat similar appearing trouble which was first distinguished and described in New Hampshire a few years ago, but which is equally common in Maine. This last mentioned disease is produced by a parasitic fungus and can be controlled by spraying.

An important distinction between the two troubles is that the true Baldwin spot does not appear until nearly harvest time or in storage, while the fungous disease begins to show first about the middel of August. The first evidence of the latter consists of spots of a deeper red on the darker portions and darker green on the lighter portions of the surfaces of affected apples.

At this stage the spots are but slightly sunken, if at all, and there is no sugegstion of a bruise. The fungus spots on the red surfaces become more sunken later in the season, the color changes from brown to black, and in cellar storage the red spots become badly browned and sunken. The green spots may take a similar course, but in many cases there is no marked change in their surface appearance. The spots caused by the fungus are not, as a rule, so large, and do not produce so large pits in the surface, as are characteristic of the later stages of the non-parasitic trouble.

The funguous disease also occurs on a number of different varieties, but it is only on the Baldwin that there is much danger of confusing the two. On the fruit of certain light-skinned varieties, its appearance is quite distinct from that of the true Baldwin spot. The funguous disease is especially common on the Bellflower in Maine, where it produces very striking bright carmine-colored spots, often with very little injury to the skin until the later stages. In storage, the centres of these spots become browned, and sometimes slightly sunken.—Chas. D. Woods, Director Maine Experiment Station.

The New Brunswick Farmers' and Dairymen's Association.

Editor The Maritime Farmer:

The Executive Committee of the Farmers' and Dairymen's Association met in Fredericton on the 3rd instant.

Ts Association will hold its regular annual Convention in Fredericton, February 28th to March 2nd inclusive. An interesting programme has been prepared, special attention being given to the question of live-stock and dairying. Professor Barton, of Macdonald College, will be in attendance. Arrangements have been made with the Superintendent of the Dominion Experimental Farm here to spend one day at the Farm, where demonstrations and lectures will be given, in connection with live-stock and dairying, under the direction of Professor Barton. It is expected that there will be a large attendance of delegates from the Agricultural Societies at this session

Yours very truly.

J. B. DAGGETT,
Secretary for Agriculture.

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The First Week will be devoted to Fertilizers, Soil Management, Insect Pests, Plant Diseases and Spraying.

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The only expense to you will be Board while in Woodstock and Railway Fare at Reduced Rates. Purchase a Single First-class Ticket to Woodstock and get a Standard Certificate from the Ticket Agent.

A list of suitable Boarding Houses will be provided to Students.

Applications for enrolment in this course will be received up to March 18th, but should be sent in as early as possible. Send applications and inquiries for further information and full program to A. G. TURNEY, Fredericton, N. B.

NEW BRUNSWICK DEPARTMENT OF AGRICULTURE,
HON. J. A. MURRAY, Minister.

Ayrshire Cow Giving 25,000 Pounds of Milk Has Come.

GARCLAUGH MAY MISCHIEF, 27,944. Imported and owned by Perfresen March 3, 1916.

Test begun December 27, 1914, test ended December 26, 1915. Due to fresen March 3, 1916.

May Mischief was born February, 1906, bred by Andrew M. Baird. Imported in 1910 by Mr. Percival Roberts, Jr., Narberth, Pa. She has produced three heifers and one bull since her importation.

What higher recommendation can we give for a dairy cow than that at ten years old she gave in one year over 25,000 pounds of milk, is due to freshen in a little over two months, and at the time of drying off was giving 50 pounds of milk daily.

RECORD FOR MILK

	Lbs. Milk	% Fat	Fat	Butter
December 5 days	242.9	3.2	7.77	9.14
January	2067.5	3.2	66.16	77.84
February	2348.7	3.05	71.63	84.27
March	2646.8	2.94	77.82	91.55
April	2431.7	3.81	92.65	109.
May	2636.3	3.23	85.15	100.18
June	2492.7	3.47	86.5	101.76
July	2445.9	3.77	92.21	108.48
August	2004.3	3.79	75.96	89.36
September	1562.6	4.07	63.6	74.82
October	1610.3	3.93	63.28	74.45
November	1532.9	4.03	61.84	72.75
December 26 days	1306.1	3.85	50.34	59.22
365 days	25,328.7	3.53	894.91	1,052.83

FOOD CONSUMED DURING TEST WITH COST OF SAME

961 lbs. Bran, at $24.00 per ton	$ 11.53
1013 lbs. Schumaker Stock Feed, at $30.80 per ton	15.60
767 lbs. Hominy, at $29.20 per ton	11.20
837 lbs. Linseed Oil Meal, at $37.50 per ton	15.65
1066 lbs. Cotton Seed Meal, at $29.00 per ton	15.46
149 lbs. Gluten, at $25.40 per ton	1.89
153 lbs. Ajax, at $33.80 per ton	2.59
668 lbs. Beet Pulp, at $26.00 per ton	16.87
11200 lbs. Corn Silage at $3.00 per ton	16.87
22233 lbs. Beets, at $4.00 per ton	44.47
1874 lbs. Alfalfa Hay, at $24.00 per ton	22.49
906 lbs. Mixed Hay, at $15.00 per ton	6.80
Green Feed	4.23
	$177.46
25328.7 lbs. milk, equals, 11780 qts., sold wholesale at 6c per qt.	$706.80
Cost of feed	177.46
Profit	$529.34

Brandon, Vt., Dec. 30, 1915. C. M. WINSLOW, Secretary-Treasurer.

Ayrshire Champions in 1915 in Record Performance.

Of the 183 Ayrshire cows and heifers that have registered in the Record of Performance test in 1915 a large number exceeded the 10,000 pound figure for milk and over 400 pounds of fat. Only in the three year old class was the record broken and by the heifer, "Milkmaid of Orkney"—39834—, with 14,060 lbs. milk and 534 lbs. fat. She is owned by Harmon McPherson, Orkney, Ont., who wins a silver cup given by the Ayrshire Association on her production and also on the winner of the four-year-old class. W. C. Tully, Athelstan, Que., is also a winner of two of these cups, in the Mature and Two year old class. The basis of awarding these cups is one point for every pound of milk over and above the amount required to qualify. Twenty-five points for every pound of fat over and above the amount required to qualify and ten points for every day between the date of freshening after calving and the end of the fifteen month period. It is expected that these cups will be presented to the successful winners at the Annual Banquet of the Association to be held in the Carls-Ritz Hotel, Toronto, on the evening of February 2nd. The following are the three highest scores in the Mature class and the two highest in the other classes. The highest score in each class wins a silver cup.

Mature Class

Name, number and owner.	Lbs. milk	Lbs. fat.	Days to Spare.	Points
Daisy of Ferndale—26735—				
W. C. Tully, Athelstan, Que	14032	544	63	12112
Lady Jane—30886—				
A. S. Turner & Son, Ryckmans Cor., Ont.	13284	502	157	11218
Burnside Violet 4th—26576—				
Western Fuel Co., Nanaimo, B.C.	13351	529	22	10646
Four-Year-Old Class				
Queen Mary,—42255—				
Harmon McPherson, Orkney, Ont.	11391	436	19	7662
Juno of Rockton, 3rd—36692—				
Est. Geo. McCormick, Rockton, Ont.	11028	408	27	6460
Three-Year-Old Class				
Milkmaid of Orkney—39834—				
Harmon McPherson, Orkney, Ont.	14060	534	40	12184
Hazel of Bonnie Brae—30676—				
G. D. Mode, Vankleek Hill, Ont.	13014	475	18	11191
Two-Year-Old Class				
Primrose of Beaver Meadow—33930—				
W. C. Tully, Athelstan, Que.	12350	463	43	12109
Lakeside Bonnie Lass—37207—				
Geo. H. Montgomery, Phillipsburg, Que.	10237	406	30	9654

W. F. STEPHEN, Secretary-Treasurer,
Canadian Ayrshire Breeders' Association.
Huntingdon, Que.

They use Maxwell's Churns in Denmark—

Fancy! Denmark—the great butter-producing country of the world—send all the way to Canada for Maxwell's Churns! Also used in Australia, New Zealand and S. Africa. Convincing proof, this, of the excellence of these well-known churns. Best of all is the—

Maxwell

"FAVORITE" CHURN (with Bow Lever)

Notice the adjustable handle on the bow lever. No other churn has this. Handle can be moved to centre or either side, whichever is most convenient for driving.

You can buy the "Favorite" in eight sizes. Strongest and best made churn on the market. Easy to work. Gives splendid results. Ask your dealer.

MAXWELLS, LIMITED ST. MARY'S, ONTARIO 1

Value of Skim Milk Explained.

Chemistry has opened up a new field for investigation in the last ten years by its discoveries in the realm of protein digestion and metabolism, how protein is converted into cell or body tissue. A single grain may consist of several different kinds of protein in a certain ratio, while another grain may consist of other proteins or the same proteins in a different ratio. It is for this reason that of two feeds containing the same amount of total protein, one may not contain the same proteins or the same proteins in the same ratio as the other and therefore may not be as efficient and of like value. Wheat contains certain porteins that are lacking in some one or more of the elements necessary for growth and reproduction, and into which protein is divided by digestion, and therein lies its inefficiency as a feed. Milk contains all the proteins necessary for proper growth and therein lies its great efficiency. These facts are well brought out by some experiments recently concluded at the Wisconsin Experiment Station.

In feeding pigs weighing from 50 to 60 pounds, they found that when the protein in the feed is taken from oats, wheat, corn, or a mixture of the three, that under normal conditions from 22.3 to 27.7 per cent of the nitrogen (protein) consumed is retained by the animal in building up its body; when the proteins in the feed came from milk casein and from skimmilk, and in only two-thirds the amount given in the grain, the pigs stored 45.5 and 63.2 per cent respectively of the nitrogen consumed, the skimmilk being the most efficient.

Not content with testing this on pigs, the experiment was extended to calves. Calves weighing 300 to 400 pounds were fed rations in which the protein came from corn alone and alfalfa alone, and calves weighing 100 to 125 pounds were fed rations in which the protein came from skimmilk alone. Those calves that received their protein from corn alone, retained 24% of the nitrogen consumed; those getting portein from alfalfa alone, retained 28% of the nitrogen consumed; while those that received their protein in the form of skimmilk retained 65% of the nitrogen consumed.

In the way of explanation it may be said that the retention of nitrogen represents growth and increase in body weight, and is merely a method of determining results accurately. If live weight alone were considered we might have the fact of the moisture content of the flesh disturb the exact determination.

We have often said in these columns that skimmilk seems to have a certain good effect in producing growth in calves that is not indicated in its chemical analysis. We have talked often of the value of skimmilk, and these experiments emphasize the matter more strongly than ever. It will be noted that for these growing animals skimmilk was from two to three times as efficient as the cereal grain proteins.

In discussing the value of proteins from different sources, Professor E. B. Hart, who is in charge of the animal nutrition investigations at Wisconsin, called our attention to the report we printed last November concerning the Indiana experiment in the use of equal amounts of blood meal, hominy meal, linseed oil meal, and red dog flour as a calf meal substitute for skimmilk. He said he felt quite certain that the efficiency of that calf meal resided largely in its inclusion of blood meal, an animal protein. The growing animal seems to require for its proper growth this animal protein, which is only found in milk or the protein tissues of animals.

Butter from Whole Milk.

I would like to get some information regarding the method of handling milk where the milk is churned instead of separating and churning the cream. Can as good butter be made this way as from cream?—L.M.C.

We consider it a wasteful practice to attempt to produce butter from whole milk. It is far better to separate the cream, even by gravity system, than to attempt to churn whole milk. The loss of fat would be too great to make any profit out of butter-making and further we can see no advantage in churning butter from whole milk but many disadvantages. It is a long, tedious process to get butter out of whole milk and in some cases it is doubtful whether any butter could be obtained by churning whole milk.

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MILK YOUR COWS
—WITH A—
HINMAN
It solves the HELP Problem.
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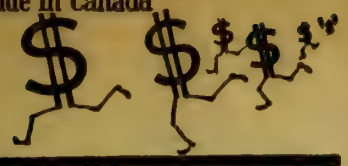


Better Butter and better prices come with Windsor Dairy Salt.

162

Increased Yield.

"In general results, note that this dairyman, after two years of record work, has increased his average yield by 2,151 pounds of milk and 65 pounds of fat per cow having gone up from a yield of 7,368 pounds of milk and 240 lb. fat from each of 15 cows, to an average from 16 cows of 9,519 lbs. milk and 305 lbs. fat.

"Thus he obtained last year, over and above the yield of two years ago. an additional weight of 41,784 lbs. of milk, worth at least four hundred and fifty-nine dollars. It pay, pays handsomely, to keep dairy records.

"Let me press this poitn again; cow testing stands four square on this plank of individual cow responsibility. The average cannot be poor if each individual is known to be good. It is each man's province to see if the meal ticket of any cow that he owns has run out. Make each one ring up her production on your precise cash register or herd records. Let no cold blooded statistics dare say of this, or any other country in grand old Ontario, that twenty or even ten per cent of the cows kept are disgraceful, hardy-perennial boarders. That might occur in some only semi-ready diar district amongst half-hearted dairymen.

"If you want in your herd several queens of the milky way, dairy records will help you—they deliver to you at stated intervals, a birthday cake for the mind, freshly baked, with candles lighted to illuminate your judgment of individual performance, your route march plans for steady advancement. The knowledge of the average or total, alone, cannot satisfy.

Testing Will Do It.

"Surely we don't need to have the poor cow always with us. Dairy records are at your service to discover and retain good cows. Instinct tells us there must be some reason, some significance behind each breadth; is it not a rational object of human existence to get the best and the most out of life? Possibly some have been too busy getting a living with poor cows to have time really to live. Cow testing steps in to say that great-hearted nature is your to work with—you have harnessed dewdrop and storm for your cows through suitable feed; cow testing now asks you to go further, to see if some corner stall in your stable is overlooked, ot dredge the blocked up channel, to dig deeper the water way, the river of your unswerving purpose to keep none but the best cows you can secure, and to know through the medium of clear-cut figures just that this cow or that one is the best, to prove to yourself or any one else just how you know that fact.

"Thanks to the help of dairy records we have men on our register who own herds of 22 cows averaging over 8,000 pounds of milk and 250 pounds of fat; several dairymen in various districts of Ontario, Quebec and the Maritime Provinces have good grade cows giving from 9,009 to 18,000 pounds of milk and from 300 to 500 pounds of fat. They would never have been discovered but for dairy records which impress the seal of satisfaction on dairy work, becoming the safeguard of quality.

Why These Differences?

"69 good cows—Total milk, 608,578 lbs.; value, $6,694.35.

"73 poor cows—Total milk, 391,872; lbs.; value $4,310.59.

"Good herd, 16 cows—Average milk 9,519 lbs.; average fat, 305 lbs.; value $104.70; feed cost per cow, $60; average profit, $3.84.

"Note—Each one in the good herd makes as much net profit as eleven in the poorer.

"Some rather startling contrasts are found in these figures relating to cows in the Listowel district. One lot of 69 pretty good cows gave a total yield of 608,578 lbs. milk; think, one hundred and eight tons more, fifty-five per cent more milk than a lot of 73 poorer cows close by. They earned over twenty-three hundred and eighty dollars more cash.

"Included in the first lot of cows is a herd of 16 with an average yield of a little more than twice as much milk per cow as in the poorer herd of nine. Above the comparatively high feed cost of sixty dollars the average profit is $44.70 per cow, or eleven times as great as the profit per cow in the other herd.

"In order to make one thousand dollars clear profit, the owner of the first herd would need only 23 such good cows, but the second owner would be confronted with the task of handling two hundred and sixty. Phew!

Show Land Fertility

"Herd records not only help to solve some of the problems of commercial dairymen who seek a reduction in the cost of feed per 100 lbs. milk, but show them the increasing fertility of their land as concentrates are judiciously used. (The total value of the essential elements in the manure from 25 cows is computed at over one thousand dollars.

"From milk and feed records sent to the office by farmers we find, for example, that eight cows in one section produce milk at a feed cost of 62 cents per 100 lbs. even when feed is valued at as much as $51 per cow. That seems a better business proposition than giving $36 worth of feed to a cow that makes the feed cost run up to 82 cents per hundred.

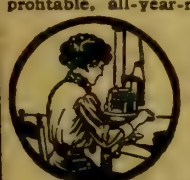
"There we have the stamp of efficiency, simply the better way of doing things, keeping eight cows geared up to produce 56,000 lbs. milk instead of the low speed total of 31,000 that a neighbor obtains, each returning a clear profit of 54 cents on each 100 pounds of milk instead of the neighbor's 32 cents. Not merely a two-bagger, records make many an exciting triple pla yon the farm diamond.

"With so much good thought by various leaders being put on the problem of Canaad's future, perhaps we can glean here something of the value of records to our rising generation. Our Dominion, the new laboratory and fusing pot of all nations, needs the sturdy race, not the stunted anaemic of the city tenement, but the choice product of the country's soil drawing from mother earth solid qualities of mind and body.

"Not only is cow testing proving itself congenial to scores of our lads, knotting them by strongest ti s to the home farm, but as it is developing that quality of complete efficiency which perfects the successful dairyman, the cramped mind of youth or adult will stretch its tough-muscles, homes will ring with the joyous laughter of the victor, the conqueror of adverse circumstances, the inspiration has come, to our certain knowledge, from dairy herd records."

Do you want to earn $10 a week or more in your own home?

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.



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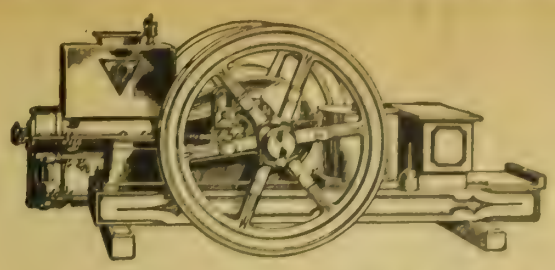


The cost of an ALPHA Gas Engine is less than the cost of doing without one

YOU plan to some day have a gas engine. You realize that you need one—that there are many jobs on your farm that could be done quicker, easier and cheaper if you had an engine. Your idea is that it will save money and time, which is also money.

Very true; yet, if an engine will save you money, you ought to use it right now. That is the way to save the money that will pay for the engine. As long as you put off buying one you are losing money that would soon pay for the engine.

It is not a question of how soon you can afford to buy an engine, but how long can you afford to do without one. You surely realize that during your life time you have in one way and another lost the price of several engines, by trying to get along without an engine. Good sense demands that you stop the loss at once.

Ask us for complete information and prices of Alpha Gas Engines. They are made in eleven sizes, 2 to 28 H. P. Each furnished in stationary, semi-portable or portable styles, and with hopper or tank cooled cylinder.

DE LAVAL DAIRY SUPPLY CO., Ltd.,

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

This School Girl Had Bad Fainting Spells

Was Weak and Run Down, But Dr. Chase's Nerve Food Made Complete Cure.

The most critical time in a girl's life comes during the school age, when she is impelled by rivalry to put forth her best efforts in studying for examinations. At the time she should have healthful outdoor exercise and abundance of fresh air, to keep the blood pure and rich, she is confined by her studies. Is it any wonder that she becomes run down in health and suffers from headaches, indigestion, loss of appetite and spells of weakness or fainting?

The case described in this letter is a good illustration ,and you can read here the splendid results of using Dr. Chase's Nerve Food to help through this critical period.

Mrs. H. Houston, Highland Grove, Ont., writes:

"While attending school my daughter became weak and very much run down. She was frequently troubled with bad fainting spells, and nothing we tried seemed to do her any good. We were advised to try Dr Chase's Nerve Food and did so with most satisfactory results. I am pleased to tell you that after using five boxes of the Nerve Food she was completely cured, and has no return of the fainting spells."

This statement is certified to by Mr. Hamilton Houston, Justice of the Peace.

The reason Dr. Chase's Nerve Food is so effective in cases of this kind is because of its extraordinary blood-forming influence. By creating an abundance of rich, red blood it sterngthens the action of the heart, revitalizes the exhausted nerves and builds up the system in every way.

The apptite is restored, digestion improves, you rest and sleep well, and the new vigor and energy is felt in every organ of the human body. Dr. Chase's Nerve Food is doing wonders for men, women and children whose systems have become weak and run down. 50 cents a box, 6 for $2.50, all dealers or Edmanson, Bates & Co., Limited, Toronto.

LIVE STOCK.

Urethral Calculi in Sheep.

Every spring and early summer complaints are rife of considerable losses among sheep and lambs in process of fattening for the butcher from what, in different districts, is described as "water braxy," "water stoppage," "water drop," bladder disease, etc. The sheep affected are invariably whethers or rams receiving a rather large supply of highly nitrogenous food and especially such as are getting mangels—hence the great frequency of the disease at the time of year mentioned as compared with other seasons. Only the unfortunate farmer whose swedes have failed (unless he be thriftless and shiftless) commences his mangels until well on in the spring.

Technically the disease from which the sheep die is cystitis, or inflammation of the bladder, but different kinds of calculi are almost invariably the cause of urinary disorders in sheep, and they are primarily responsible in these cases of bladder disease. What is commonly described as disease of the bladder in fattening wether sheep and lambs is not, in the first instance, an affection of the bladder at all—the bladder being only affected by the mechanical impediment offered to the evacuation of its contents through the natural channel, which is the uretha.

Calculi, when formed in the kidneys, and found in the ureters, where they are not uncommon, though they rarely give rise to noticeable symptoms, and have but little pathological importance, are termed renal calculi. When formed in the bladder they are named cystic calculi; in the uretha, utethral calculi; and when abundant around the sheath or wool at the opening of the urinary passage, or more correctly at the outlet from the bladder, they are termed preputial calculi. Very often the obstruction is not due to "stones" in the ordinary acceptation of the term, but to collections of gravel or sandy matter or the formation of crystals in and around the uretha, which check, or stop, the flow of urine, and so cause inflammation of the bladder. The reason why male sheep are affected is owing to the peculiar construction of the uretha; the presence of the singular structure known as the "worm," or appendix vermiformis, and the extreme smallness of the urethal outlet, favors the accumulation of calcareous deposits, which, in other animals would pass away readily enough. In the ewe, as in other females, the urethal canal is very short and direct and of much larger calibre, and wider at the opening, than the male uretha.

The Use of Roots

In all probability is it often a combination of several articles of diet rather than one in particular, that is in fault, but there is a general agreement in associating the disease with the use of saccharine roots, and especially ripe mangels, in combination with forced feeding on highly albuminous foods, such as beans, peas, barley and wheat. Want of exercise, and total abstinence from water, are also regarded as conditions tending to favor the deposit and accumulation of gravel which chokes up the urethal canal. While the necessity for the rapid production of mutton for the butcher exists, along with the use of sheep as manure distribtuors, the foods mentioned will continue to be used for feeding sheep, but when losses are occurring from cystritis a temporary change of diet and exercise on pasture for the remainder of the flock is indicated.

Treatment

Small calculi forming on the wool of the abdomen, and causing partial obstruction to the flow of urine, should be snipped off. Where the orifice is choked with gravel it may often be removed by careful manipulation, but when, as frequently happens, the phosphatic material is deposited in the uretha for some distance up, or a small calculus is present, there is nothing for it but an operation for its removal. Where no relief is afforded the symptoms become more and more urgent. As a result of the retention of urine in the bladder it becomes inflamed, the inflammation extends to the kidneys, and, in some cases, the bladder is ruptured. Death results from uraemia, the blood and solid tissues becoming impregnated with the kidney excretion. Fomentations, lubrication by the injection of carbolized oil, and the internal administration of belladonna, are recommended to assit in clearing the urethal passage, because it relaxes involuntary muscles. A cathartic, followed by diuretic agents and change of diet, are indicated. With inflammation established recovery is practically hopeless, and if relief from the obstruction cannot be given it is wise to slaughter the animal before fever and uraemia sets in, because then the blood becomes loaded with impurities and the carcase quite unfit for human food. The liability of the rest of the flock to the same condition should not be overlooked.—Veteran.

Breeders Should Now Raise All Stock Possible.

Owing to the heavy drain upon the live stock of the various warring nations of Europe, they have been forced to go abroad for supplies. The longer the war lasts the greater will be this demand. Moreover, when peace is restored these countries will require large number of the various classes of animals to replenish their studs, herds and flocks. It should be borne in mind, however, that the buyers, who come to this country after the war, will require better animals than have been bought during war time, as they will be used largely for breeding purposes.

With this end in view, the best of the females and particularly the young stock should be kept for breeding purposes. Breeders should not fail to raise all the live stock possible at this time, in order that the country may be able to supply a large number of the animals that are certain to be needed by the warring countries. At present, however, there is an unequal distribution of live stock in the country. In certain sections there is a heavy surplus, with a corresponding scarcity in other parts. During the past year hundreds of young cattle from our Prairie Provinces have gone to the United States as stockers and feeders. These should have been kept at home, particularly the females. Sections of the West are reported as being in need of good draft horses, particularly draft mares, while, in sections of Ontario, there is an over supply of this particular class.

In order to remedy these conditions, the Minister of Agriculture, through the Live Stock Branch, has decided to grant liberal aid to breeders who wish to secure good breeding stock. The conditions under which aid will be given are as follows:

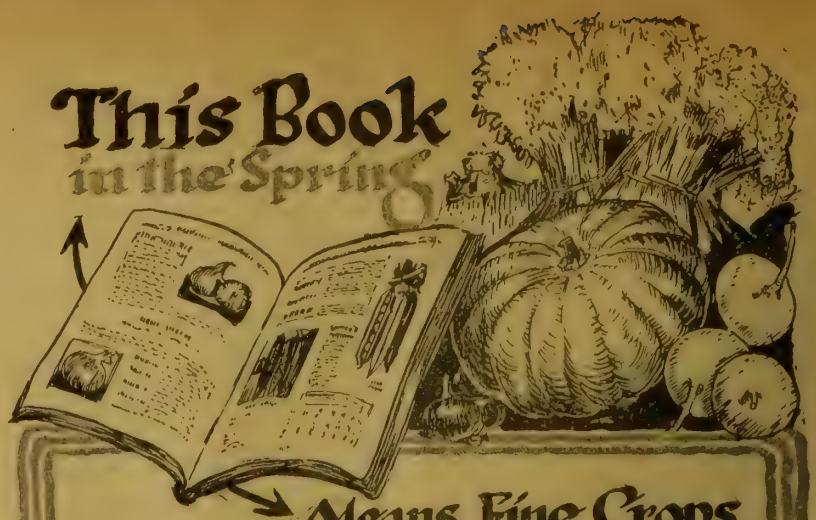
In the event of a number of farmers in any district of Canada wishing to cooperate for the purchase of breeding stock in carload lots from some distant section of the country, the department will pay the travelling expenses of their duly appointed representative during the time required to effect the purchase and transport the shipment to its destination.

Should it be desired, the live stock commissioner will nominate a suitable person who will be directed to accompany this representative and assist him as far as possible in buying and shipping the animals.

Persons wishing to take advantage of this offer should make full arrangements with the Live Stock Commissioner as to place and time of purchase before sending out their representative.

Choice of a Bull.

When will dairymen practice the belief which they hold that the bull is half the herd? Nearly everyone believes this, yet very few take such care of the bull as to get out of him all that he is capable of producing or transmitting. It is ont enough to say that your bull is a purebred, and that he came from such and such a herd. There are poor purebreds, and they have been used very largely because they were cheap, and they have been the cause of degeneration rather than improvement of the herd. If breeders and dairymen would only realize how thoroughly in the course of years the blood and characteristics of the bull impregnate and dominate any herd where he is used, there would be more care in selection. Let me make a selection first of all to those who are not raising purebred herds, but are rather in the dairying business for the profit of the cows, either at the pail or churn. Use none but a purebred bull. Remember that the bull should impress upon his get either his own likeness or the likeness of an ancestor, but unless a bull be extraordinarily prepotent, he more often impresses on his offspring a likeness of a remote ancestor rather than any fixed characteristic from himself. Therefore, in using any bull, it does not follow that his daughters will have the characteristics of his dam—the chances are that the progeny will resemble more closely in appearance and characteristics a more remote ancester than the dam of the



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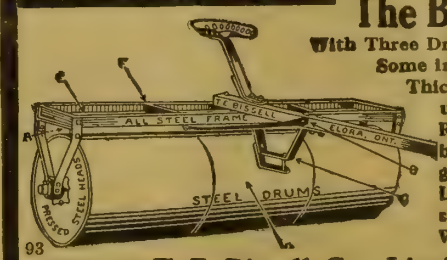

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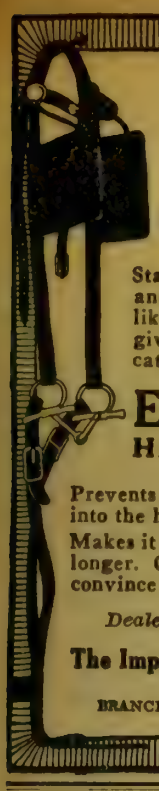

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bull. Consequently it follows that if there be any impure blood in the sire used, there is a chance that his progeny may partake of the impure characteristics, and that he will not impress upon his offspring the desired qualities to the same extent as if he were pure. If you seek to produce milk, and milk only, without regard to what is contained in it, use a bull of a breed whose characteristics is ot give a large flow of milk, but let it be one of the milking breeds. If you are seeking to produce animals for the butcher's bolck, breed from a pure bull of one of the beef breeds. To those who are seeking to breed cows for the dairy, whether they be purebred or whether they be crossbred, I would say, remember the adage that "like produces like or the likeness of an ancestor." See that the dam of the bull you propose to use has the characteristics in either milk giving or butter making, and in form and size of udder, that you desire to see perpetuated in your herd, that his granddams were possessed of like characteristics, and so back, if possible, to at least four generations. If the female ancestors be possessed of those characteristics you seek to have established in your herd, then you may be reasonably assured that the bull will, when mated properly with desirable cows, produce staisfactory offspring. To those using what is known as an "in-bred" sire, that is, one inbred to a common ancestor on the part of both sire and dam, bear in mind that while the bull so in-bred will probably have the ability to fix the characteristics of the common ancestor to whom he is in-bred, he will, as surely fix and exaggerate the undesirable features of the ancestor as he will desirable ones. Therefore, it is especially necessary to see that the ancestor to whom he is in-bred, or his descendants through whom your bull traces to him, be not possessed of characteristics that you do not desire to perpetuate in your cows. To those breeders of pure-bred stock who are not financially in a position to go outside their own herds for desirable sires, I would suggest that they mate the sire they have in use to their very best cow; that they retain her son; that they mate him with the next best cow not related to the dam; and so on until they produce themselves a sire which has, as female ancestors for four generations back, desirable cows. In this way they are pretty sure to have a bull that will produce in his offspring the sought-for qualities, provided the cows to which he is bred be themselves desirable.

But it will be quicker and probably cheaper in the long run to buy a good, well selected sire if the one in use is not really good.

With good health at your back you can do anything.

If you are troubled with Headaches, Dyspepsia, Biliousness and kindred sickness you can't expect to accomplish much.

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that "True Blood Purifyer" has been proved, during the last fifty years, to be the one best remedy for these diseases.

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Dr. Wilson's Deadshot Wormstick in candy form for children. A sure and never failing cure. 6

How Long Should a Cow be Kept.

Many dairymen and others who milk cows for profit believe that when a cow reaches the age of seven or eight her useful years are over, and that she should be replaced by one younger. But, other things being equal, this is a mistake. A cow that has been well cared for, with generous rations and proper attention given to her comfort through all seasons of the year, is better and will make a more profitable return at eight years old than at any earlier age; in other words, she is in her prime, and she will continue in this condition several years, and will not be considered an old cow until 14 or 15 years have passed. Cows with first calves—at two or three years—are generally unprofitable in their milk yield, and one really good cow between seven and eight years old will pay a better revenue than two that are performing their first year's duties in the dairy herd, and she will probably consume but little more food than one of the younger ones. The fact is worthy of the consideration of those who are dairying for profit. A prudent dairyman who manages well knows which are his best cows; these he will not sell, under ordinary circumstances, as long as he continues in the business. It is, therefore, wise in buying a cow to investigate well the reason for selling. It is highly essential that a dairy cow, to be profitable, should be a hearty eater, for just in proportion to her ability to consume and assimilate food will she make returns to her owner for his care and attention. This valuable feature can generally be determined very early in the animal's life. A calf with a dainty appetite is almost sure to retain this undesirable quality after she becomes a cow, while one with a rugged constitution and greedy, always wanting more, becomes the cow with power to consume food largely, and if bred and constructed for dairy work, this is the kind that will pay largest returns. These observations are more applicable to Jersey cattle than to Shorthorns, whose value as barrens is an important item of consideration each season. It holds true, however, that a really good milch cow may be used profitably many years, and should not be sacrificed to the butcher when young.—T., Suffolk.

The milk in the pail the cow kicks over is lost forever

AND the butter-fat that goes into the can through the skim-milk spout of a cheap, inferior or worn-out cream separator is just as surely lost as the milk in the pail the cow kicked over. If you are trying to get along without a cream separator, or with an inferior or worn-out machine, you are losing butter-fat right along and butter-fat is money.

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every day you use it it will be paying for itself out of its own saving.

If you haven't the spare cash right now that need not hinder your immediate purchase.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at time of purchase and the balance in several installments, so that a De Laval really pays for itself while you are using it and getting the benefit from it.

Let the De Laval start saving cream for you right now while butter and cream prices are highest. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

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On account of the high commercial value of the oil flaxseed is not extensively used as cow feed. It contains a considerable quantity of protein, with an excess of oil, but very little starch. Steeped until it forms a gelatinous mass, it is of great value as a food for calves on skim milk. It may be used as above either whole or ground. Mixed in small proportions along with coarse grains and ground it adds greatly to the palatability and wholesomeness of the meal ration. It should very seldom constitute more than one-fifth of the grain ration and one-tenth is usually an effective portion.

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Had Dyspepsia.

Says: HE NEARLY TURNED UP HIS TOES.

Burdock Blood Bitters CURED HIM.

Mr. H. N. Manderson, Stettler, Alta., writes: "About twenty-five years ago, in the Province of Quebec, I came pretty near turning up my toes with dyspepsia. A cousin of mine persuaded me to try Burdock Blood Bitters. In about two weeks I could eat anything from raw fat pork to unleavened bread. Three bottles did the job, and I have never been troubled with my stomach since. You would say that this is wonderful if you could only see what we sometimes have to live on in this country; bannock, half cooked beans, etc."

Burdock Blood Bitters has been on the market for the past forty years, and cannot be excelled as a medicine for all diseases or disorders of the stomach.

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THE HORSE

Wintering Horses Cheaply.

Years ago I learned through circumstances I could not avoid that horses, especially idle ones, are fed and pampered more than is good for them during the winter months. Even the work horses often are overfed and their digestive systems thus impaired till they forfeit considerable of their strength an denduring qualities. We had bought a piece of practically unimproved land. There was nothing on it except a good well, corn crib, and rough stable and hay barn. A new house had to be built, and while it was in course of construction the severest part of winter came on. There were practically no lots for hogs around the barn, so the dozen or more frisky Duroc-Jerseys were nailed up in the old barn, while the house was being built. It was during this unsettled state of affairs that the first snow struck us, covering the ground to a depth of 5 inches. We managed to slip the milk cows into one end of the old barn, ont of the cold and snow, but there was onthing else for it but that the horses should hump up on the leeward side of the building, out of the wind, but getting their backs covered with snow.

Up till the time of the snowfall, the horses, which were idle most of the time while the house was going up, had some cornstalk pasture and a few acres of bluegrass to range on. They did not receive one bite of grain or stored roughage, because their owner did not have it to feed. The snow of course covered up most of the grass, and I began to wonder what was to be done for feed. With enough cash perhaps to buy a good bale or two of hay, and only a few shocks of old fodder up over head in the barn, the outlook did not look especially dazzling. The horses got to pawing around some grass spots in a small patch of timber on the back of the farm, and it seemed as though they were doing all right; although I have looked off the house-roof, where my fingers got mighty cool in handling frozen nails before driving them and wondered whether I ever should get just punishment for making those poor animals rustle their feed out of the snow.

But the horses did not seem to care for the unhandy method of pawing the snow off the ground, and using their teeth as ice-tongs in sucuring their grass. There was a sheltering bank out in that patch of woods and those horses would sleep behind that of a night, rising and going after their grazing early. In fact, they rarely ever came to the house for water, and when they did it was drink and gallop back to the field and pasture. I kept a close watch of the animals, fully expecting a great fallingoff in their flesh, but it never came. Even the colt in the bunch did not fall off, as one would have expected, but if it had I would not have known where to put it—at least till one room was ready for occupancy in the new house. I might have stored him there. At last, when I saw that I would not have to stop and lose the time to bury that bunch of horses, I became convinced that they were doing about as well as I ever had them to do, so I let the horses do the worrying, if there was any, and went ahead and finished the house.

In the meantime I made use of the old fodder overhead in the barn by feeding it out to the horses, and by the time it was gone I had a very little feed to buy. The horses all came through the winter in fair shape, and those which were young, made a fine growth the following season. Of course, a horse that has "roughed it" more or less throughout the winter months will not show up as well when spring comes as those which have been carefully housed, pampered and fed heavily. This is one of the points which accounts for the vigor and activity of the free-range horses. Their coats of hair grow long and thick through constant exposure to the severe cold, and this affords good protection from the rigors of winter; while the daily exercise promotes ideal digestion, good health, and the development of a rugged constitution in general.

Since the foregoing experience I always have wintered all the idle and stock horses right out in the open, merely providing a sheltered place for them to slip into, out of cold rains, sleets and snow, and I would not think of trying any other method. Only last winter some mule colts on our farm ranged right outdoors, and a huskier pair I never raised. I venture the statement that those colts were not under shelter a dozen times all wir ter, unless it was storming. Apart from their grazing they had good, bright cornfodder and kafir, with a light feed of corn. It may be added that generous feeding of grain will be found highly beneficial for range norses, especially colts, provided one has plenty of it and it is not too high in price.—Iowa Farmer in Breeders' Gazette.

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When you buy a Horse.

When one purchases a horse warranted sound, what is the legal interpretation of the word "sound"? An old English judge, in writing an opinion on the subject, said: "I have always considered that a man who buys a horse warranted sound must be taken as buying him for imemdiate use, and has a right to expect one capable for that use, and of being put to any fair work the owner chooses.

"The rule as to unsoundness is that disease or accident, undergone any alif at the tiem of the sale the horse has any disease which either does diminish the natural usefulness of the animal; or, if the horse has, either from disease or accident, undergone any alteration of structure that actually does at the time, or in its ordinary effects, will diminish the natural usefulness of the horse, such horse is unsound."

The foregoing opinion expresses the sentiment of the law in this country on the subject. In every transaction where the sale and warranty of horses is concerned the courts will look into the individual transaction and try to ascertain the intent of the parties and the agreement as made between them.

An Actual Case

There is an interesting case on record where a horse breeder sold an animal and delivered with it the following written instrument: "Office of O, Importer of Horses. Horses constantly on hand. Every animal guaranteed a breeder. Sold this day to J. a horse and if it does not give satisfaction, it may be exchanged for another."

The court in construing this instrument held that the wararnty was that the horse was an average breeder, although nothing special had been said, the statement merely appearing on the letterhead of the importer and breeder.

The law merely assumes to protect the purchaser in these cases against fraud and deceit. The old time horse trader with his ability to "skin" all who dealt with him finds no sympathy in court. A horse must be absolutely sound, or the law will attach the liability to the seller in every instance where warranty to that effect has been made.—Chesla C. Sherlock.

Points of a Horse.

A subscriber asks for color, average weight and height of the several breeds of horses. Percherons were formerly mostly grays, but now black is very popular, and bays, roans and an occasional chestnut are seen. Percherons stand from 16 to 17.2 hands high and weigh from 1600 to 2200 pounds and more.

Clydesdales are mostly brown, bay and black, 16 to 17 hands high and weigh from 1600 to 2200 pounds. Belgians run largely to roan, black and bay in color, and Shires bay, brown, black and gray. Belgians are 15.3 to 17 hands high and weigh from 1700 to 2500 pounds, while Shires stand 16.2 to 17.2 hands high and weigh from 1700 pounds up.

Morgans are purely an American breed and are largely bays and browns and 15 hands is perhaps a fair average height. American saddle horses stand about 15.2 hands high and are

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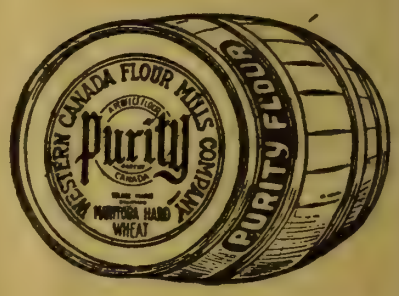

PURITY FLOUR

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brown, black and chestnut in color for the most part.

The Cleveland Bay horse is either a light or dark bay, with black legs, 16 to 16.2 hands high and weighs from 1000 to 1300 pounds. The German coach horse is slightly smaller, standing 15.2 to 16 hands, weighing from 1000 to 1200 pounds and bay or brown in color.

The Thoroughbred horse is usually brown, bay and chestnut, with white points. The Hackney is brown, bay, roan and chestnut, 14.2 to 16 hands high. Shetland ponies may be any horse color, spotted ones being popular. They are from 36 to 42 inches high and weigh from 275 to 500 pounds.

Signs of Foaling.

Beginning enlargement of the milk glands is the earliest sign of foaling, but markedly variable as to time, dependent on the individual and certain physiological phenomena not always clearly apparent. However,, when this evidence appears the bag gradually enlarges, becoming tense with secretion and newly-distended blood-vessels. If we are dealing with a plainly pregnant mare, this sign warns us of approaching foaling. This incipient milk gland activity is usually manifest earlier in mares with the first foal than in matrons of the stud. However, as foaling time approaches milk secretion may become so profuse as to occasion its dripping from the teats or escaping in a stream.

These symptoms, together with an apparent change of mental attitude in the mare, lead the observer to watch for those manifestations denoting rapidly-impending foaling. When one observes the so-called formation of wax on the ends of the teats, he then has good reason to expect a foal in from 24 to 48 hours, although this phenomenon is not by any means invariable and foaling may be delayed after full formation of teat wax for several days —in my experience as long as nine days.

The really weighty evidence of foaling within a day or two is the loosening of the pelvic ligiments, particularly those at the base of the tail, which allow the muscles covering them to depress and bringing about a sinking-in of the croup. At the same time the lips of the external parts become slightly swollen, congested, bluish in color on the inner aspect, stand apart, a trifle flaccid, and from the orifice issues more or less secretion.

Following or accompanying these signs, a decided change of mental attitude in the mare is quite evident. As the event approaches the mare gives evidence of uneasiness, her feeding is interrupted, fugative pains due to womb contractions are manifest, and the countenance plainly denotes anxiety. If the mare is at liberty, she will usually withdraw from her companions and seek a quiet spot in which to foal.

Foaling

Under normal conditions foaling is accomplished rapidly and with but slight discomfort to the mare. Should any delay occur, though covering a few hours only, a dead foal is inevitable. This disaster is due to the fact that the mare's afterbirth is loosely attached to the womb, and frequently becomes detached early during parturition, thus cutting off the foal's blood supply and necessary oxygen.

Many foals are unnecessarily sacrificed during the act of foaling from lack of knowledge on the part of the breeder as to easily-acquired physiological facts and manual manipulations simple in application, and quite possible for the ordinary breeder to employ at the beginning of foaling. The breeder should acquaint himself with the normal foetal positions, so that he may correctly determine whether or not the foal is coming properly. Such examination should be made immediately on the advent of labor signs, since delay beyond a reasonable period of time certainly presages a dead foal, and not infrequently a dead mare also. Such knowledge on the part of an owner will stimulate the early summuns of a veterinarian, who in all probability will be able to save both foal and mare. There is no logical explanation of the great variability in the duration of pregnancy of the mare, although many hypotheses have been advanced, none of which can be accepted by the thoughtful investigator. Thirty years of fairly wide experience among the large breeding ranches have convinced me that the duration of pregnancy in the mare is a pure idiosyncarsy, depending solely upon individual physiological entity.—"Breeders' Gazette."

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MONCTON BUSINESS COLLEGE
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Geo. J. Schmi , Principal

"Monday Morning Leg."

Lymphangitis, or "Monday morning leg," is a malady to which some horses are more prone than others, but the simplest method of prevention in all cases is to decrease the quantity of food allowed on Sundays and other rest days, instead of giving more, and especially in the case of animals that are predisposed to lymphangitis by breed or constitutional tendency. No horse standing idle in the stable should have as much food as when engaged in hard work. It is not necessary, and therefore it is most wasteful. In cases where the animal has been heavily corn-fed, the best way to cut short an attack is to give a full dose of physic—physic meaning an aloetic ball—but when green meat is the staple diet it is better to give linseed oil. The following is a good drench: Oil of turpentine, 3 oz.; sweet spirits of ntire, 1 oz.; linseed oil, 1 pint. This may be repeated in six hours. The enlarged limb should be freely and frequently fomented—fomented, not padded about with a piece of old sacking and half a gallon of lukewarm water—and afterwards dressed with a lotion of acetate of lead and sulphate of zinc, of each ½-oz.; water, 1½ pint. There are differences of opinion as to whether the horse should be exercised or not. Some affirm that it disposes to elephantiasis, but our opinion is that it is useful to move the animal about, and that movement helps to clear up the effusion. Movement is painful at first, and the animal can hardly put the foot to the ground, but in a short time the lameness becomes markedly less, and the swelling reduced in volume. If there appears a tendency for the swelling to persist after the lameness has become less or disappeared, the animal should be given a course of combined tonic and diuretic medicine, receive food that is light and easy of digestion, have regular work or exercise, and the limb should well be hand-rubbed at frequent intervals, and regularly bandaged while standing in the stable. A suitable ball for swelled leg, after the active inflammation has subsided, is:—Sulphate of copper, chlorate of potash, and powdered gentian, of each 1 drachm; powdered nux vomica, 20 grains; powdered resin and nitrate of potash, of each 1½ drachm; soap and Venice turpentine to form a ball. One of these should be given every night for a fortnight.—Veteran.

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THE LAWRENCE WILLIAMS CO., Cleveland, Ohio

Heaves of Horses.

Heaves is a very common and annoying disease of horses, interfering seriously with the usefulness of the animal, and consequently detracting from its value. Mainly a disease of old horses, it is essentially the result of faulty feeding and working, especially hard pulling or fast driving when the stomach is overloaded. Gross feeders are frequetnly subject to heaves.

While in old, established cases there may be alterations in structure of the heart and stomach, the principal changes are observed in the lungs. These consist first in an enlargement of the capacity of the air cells through dilation of their walls, followed by a passage of the air into the lung tissue between the air cells. Owing to such structural changes it is impossible to prevent progressive development of the disease, which, however, under proper care, may go on slowly, the animal remaining serviceable for certain kinds of work for years.

Except in the very early stages the disease is readily detected. The symptoms are those which would naturally be manifested in a condition where the lungs are involved. A peculiar short, grunt-like cough is usually present, and when the animal is exerted a wheezing noise accompanies the breathing. The principal and characteristic symptom, however, is the jerky or double movement of the abdomen in an effort to force air from the lungs. The air passes into them freely, but the power to expel it is lost to a great extent; therefore the abdomenal muscles are brought into play.

Depraved Appetite

Indigestion is frequently observed in these cases, and the horse may have a depraved appetite, as shown by a desire to eat dirt and soiled bedding, and there is a tendency to the condition commonly termed "pot-bellied." The animal, though a heavy feeder, becomes unthrifty and emaciated.

A poorly vetnilated stable, humid weather, severe work, and overfeeding with coarse, dry feeds tend to aggravate the trouble.

As in this condition structural changes have taken place in the lungs, teratment, as a rule can only be directed to the relief of the symptoms, and it is not possible to effect a complete cure after the disease is established.

In the case of an affected horse it will be an advantage to dampen the food with a mixture of one part of molasses to three parts of water, so that no dust may arise while the animal is eating. It is also desirable to restrict the amount of hay or forage, as large quantities of bulky feed which distend the abdomen increase the difficulty, and an animal with heaves should never be driven or worked when full of such material.

In these cases Fowler's solution of arsenic may be given in doses of 1 ounce in the drinking water three times daily. Ordinary lime dissolved in drinking water (limewater) will be found beneficial. Lime may be added to a barrel or cask of water, and after the resulting mixture has become clear through precipitation of undissolved portion of the lime, the limewater may be used freely in watering the animal.

POULTRY

Features to Remedy.

(By M. A. Jull, Macdonald College, in Canadian Poultry Review.)

There seems to be the general impression on the part of the public that the poultry industry is something different from other allied industries of agriculture. There are thousands of uninformed people who apparently take it for granted that money can be made out of the poultry industry when all other means have failed. It is difficult to attempt an explanation of the underlying current of opinion responsible for this state of affairs. There are a few conditions, however, which are suggested, and the consideration of these will enable us to secure a better grasp of the real situation of the poultry industry.

The poultry industry of Canada is made up of very many small parts, i.e., the bulk of the eggs and dressed poultry produced comes from the flocks kept on the farms. These flocks are comparatively small in number, and, when considered by themselves do not appear to have a very great influence upon the total production. This is one point which is not given enough consideration and it should always be borne in mind that the backbone of the poultry industry is the farm flock, consequently and improvement must largely result from the improvement of poultry-keeping methods on the farm.

Poultry raising is easily adapted to moderate means. A small beginning can be made at comparatively little cost and good profits can be secured in a small way. This seems to be one of the alluring features of the industry. People seem to imagine that if a profit of $2.00 to $3.00 per bird can be made with a flock of 50 or 100 birds, then the same relative profits should be made when 2,000 or 3,000 birds are kept, but, this is not so. This feature, however, has led to a speculative tendency in poultry raising. Living examples of speculation in poultry raising are to be found in various idle poultry farms throughout the country. In some cases, wealthy business men have established large poultry farms which soon became absolute failures. The principle cause of failure is ignorance, and, in poultry raising, it is especially true, that "a little learning is a dangerous thing."

More Knowledge.

It is very obvious that one of the greatest needs of the times is dissemination of reliable information throughout all parts of the country. In order to provide the public with information which shall be of greatest service, much investigational and experimental work must be undertaken. The public must be informed regarding the most profitable means of poultry production. It is true, that a certain amount of poultry literature is being distributed about the country, but there is a need of more literature, and it should be more widely distributed. In this connection experiment stations and colleges should assume the responsibility of informing the public, and this they cannot do without more work being done in connection with the various poultry establishments. Investigations must be undertaken and experiments must be conducted in order to determine the best methods for poultry producers to follow. At present there is too much haphazard work being done and the results are not what they should be.

A More Stable Industry.

When reliable results are secured from experiments in connection with the various phases of poultry production, then better methods will be adopted and larger profits will result to the producer. If we consider the phase of production alone, we realize that there is an excessive wastage. Consider for instance, the number of infertile eggs produced during the breeding season; the number of fully formed dead chicks in the shell; the number of chicks which hatch but do not grow to a profitable size, and, consider also, the large number of chicks which are matured but which bring little profit to the producer. Every one of the phases mentioned above need to be greatly improved before our industry will be placed on a sound basis. What we need, is rock-bottom for future development. A better class of stock, and improved breeding methods wil overcome much of the wastage at present experienced. It is the writer's opinion, that constitutional vigor, more than anything else, means success or failure in the poultry business. Of coruse, there are many other phases regarding production which affect results, but these cannot be discussed here. There is the question of size of flock, soil contamination and many other factors which must be given proper attention. There are one or two other matters, however, which should be mentioned and which deserve the consideration of everyone who is interested in poultry keeping. Take for instance, our present methods of marketing poultry products. Trade conditions are so complicated that it is safe to say that a great majority of the consumers living in the large cities, do not know what a fresh egg tastes like. This is one of the distressing features of the poultry industry and it seems very peculiar that it should take the average egg produced in the country from two to four weeks to reach the consumer in the city. With the adoption of egg standards, however, there should follow improvement in marketing conditions. This should result in the improvement of the quality of eggs marketed, greater demand on the part of consumers and higher prices to producers. The marketing problem, however, is a very complicated one, involving co-operation, which cannot be discussed at the present time. It is merely mentioned here to impress upon the readers one undesirable feature in connection with our poultry industry.

Another serious condition which reflects on poultry-breeding work is the manner in which some poultry breeders sell live birds. Instances are related where the grossest mis-representation has been made and where stock has been sold which did not possess the qualities accredited to it. This feature is very apparent in the United tSates where the industry has developed to such enormous proportions. The perusal of almost any American poultry periodical will reveal the unjust and unfair methods adopted by certain poultry breeders in disposing of their stock. It is to be hoped that this undesirable feature will soon be eliminated from the poultry breeding industry of Canada.

In conjunction with the matter mentioned above, may be mentioned the kind and nature of advertisements adopted by many poultry breeders. This applies particularly to claims made for egg production in stock offered for sale. It is quite obvious that many of the claims are not only misleading, but are absolutely incorrect. This is clearly a matter of fair play and fair business, and, it is hoped that as time goes on, false advertising will disappear from our poultry periodicals.

There is yet another matter which should be mentioned here, if for no other reason than to serve as a guide post. For many years, many "Systems" have been adopted and applied to various phases of poultry production. Some of these have been termed "Secret Systems" for which great claims have been made. It is true that some of these "Systems" possess certain merits, but it is also true that a large number of these so-called "Systems" are void of all merit, and, moreover they have done much harm to the proper development of the poultry industry. The writer is reminded of a good suggestion, given some time ago, by the Editor of the Review to the effect that what we need in the poultry business is "system" and not "Systems."

Lastly, the questions of standards might well receive our consideration. You are familiar with the standard qualifications of the various breeds of poultry, and you also know what effect breeding for feathers exclusively has upon either egg and meat production. No criticism is offered to the adoption of standards, or breeding to standard, as long as it does not seriously affect utilitarian values. Sometimes, however, breeding for feathers has been carried to the extreme, and egg production has been affected. Consider for one moment, the effect of double mating on egg production. The writer appreciates the necessity for double mating to produce standard males and females, but, the point in question is, the effect which such a method has on practical methods. It is practically obvious to everyone that highest quality Barred Plymouth Rocks cannot be produced for exhibition purposes and for egg production at the same time. The writer considers this matter from the commercial standpoint and no mention would be made of double mating if it did not affect the commercial poultry industry and the breeder of exhibition birds realizes that the extensive development of the commercial poultry industry is of greatest benefit to the breeder of standard bred fowls.

Recent reports are afloat that rose comb varieties of Plymouth Rocks are to be produced and that single-comb Wyandottes will also appear. It is to be hoped that there is no foundation in such reports that Plymouth Rocks with rose-combs and Wyandottes with single-combs will ever be admitted to the standard. If such varieties were classified as standard varieties, it would only serve to complicate poultry-breeding work.

In this short article, merely a few of the outstanding features which affect poultry production have been mentioned. The writer is not a pessimist but is an optimist regarding the future development of our industry. During recent years the industry has been developing very rapidly, and there is every reason to believe that even greater progress will be made in the future. If some of these undesirable features are eliminated from our industry, then the industry will be placed upon a better working basis and larger profits will be secured by commercial producers and breeders, and greater satisfaction will result all round. From the commercial standpoint the need is felt for a well established farm poultry industry. Practically every farm should have a flock of sufficient size, which when given the best attention, will give the maximum returns. A great future lies before the poultry industry of Canada.

Eggs for Hatching.

Every breeder who has eggs for hatching to sell, should give a binding guarantee. He should at least guarantee eight chicks out of a sitting, or the eggs duplicated at half price. He would not lose anything if he gave a sitting free in exchange for the poor one. He would have a pleased customer, who would probably bring him in considerable business. At least, that customer would be liable to recommend him to others. One dissatisfied customer can do a great deal towards ruining one's reputation.

Eggs, to hatch well, must be produced under sanitary conditions and from healthy parent stock. Therefore, long before the season opens, you get your breeding birds in proper condition. Mate your birds for the best results and sell no eggs until your pens have been mated at least three weeks. Discard all birds from your yards that are not up to standard requirements in every particular.

Never sell cheap eggs for hatching. If the eggs from your stock are not worth at least two dollars per sitting, you had better quit the business. As much care must be taken not to overcharge. Put a fair price on your eggs, but these people who sell eggs for hatching at 75 cents per 13 must have a very poor opinion of the quality of their stock. They must sell eggs to beginners who want something "cheap," but remember that the best is always the cheapest in the end.

Do not ship eggs over five days old. If the eggs are to go any great distance, it is best to ship the eggs the same day that they are laid. Examine each egg carefully before shipping. Try to send eggs of uniform size and color, as that will give your customer a much better opinion of you and your stock. Remove all eggs that are rough, irregular in shape, or spotted. Remember that an egg with just a drop of kerosene oil on it, or a hole the size of a pin head, will have a very poor show of hatching.

Never send out eggs that you are doubtful about. If you think they wouldnt' hatch for you, they certainly won't hatch for you. Many unscrupulous men doctor their eggs before shipping, thus keeping them from hatching. What a combination ensues if they only could hatch. Other breeders advertise eggs from a certain pen of six females. When the figuring up at the end of the week is done, he finds that possibly he has shipped 100 eggs from that pen in the past week. Easy to make money that way, isn't it? These people will be found out some day, but as it has been said that "a sucker is born every minute," they will doubtless reap in a large harvest before their double dealings are discovered.

In packing eggs for hatching, pack them with the greatest care possible. If shippers would give a little more care, time and money to the shipping of eggs for hatching, there would be fewer complaints. It is nearly impossible to pack eggs so that there will be absolutely no breakage. The express companies invariably are to blame for the breakage of eggs entrusted to their care. A law should be passed, making the express companies liable for excessive breakage of

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eggs. No matter how carefully the box was packed, the agent usually forgets and jams something down on top of the box, thus oftentimes spoiling valuable eggs. All expressmen are not like that, fortunately. Many handle eggs with the greatest care, allowing them to reach their destination safely.

Try to please your customers, even if you do so at a loss to yourself. A pleased customer is any breeder's best advertisement. In any business there are always people who are ready to complain. If the eggs don't hatch well, the breeder, of course, is to blame. Possibly the purchaser remembers that he ran the incubator too high the first week and too low the last week. He may have forgotten to fill the lamp; the regulator may have been wrong. Stop and consider the question carefully before you make a complaint. Put yourself in the other man's place and generally it will be found that he did his part.

If you are selling eggs for hatching, send out none until you are assured that the pens are running a good percentage in fertility. Meet a dissatisfied customer half way; be honorable in your dealings; make no claims you are unable to carry out, and advertise, advertise, and advertise all the time. Some people believe in advertising only during the egg season or when they have stock for sale. To be successful, you must advertise continually. Increase your space possibly during the busy months, but never stop advertising entirely. The man who keeps his name before the public all the time will find customers waiting for him when he is ready to deliver the goods.

Sanitation in Poultry Quarters.

Regardless of the type or construction of the laying house, if the birds are to be kept free from disease and in a vigorous condition, it is necessary to practice careful and thorough sanitation. This work naturally groups itself along three lines, namely:

The droppings should be removed from the dropping board whenever they are wet or give off objectionable odors. When by the use of absorbents, the moisture can be kept from them they are not harmful. It will usually be found most economical to do this cleaning at least twice a week during the winter.

The litter on the floor of the house should be removed and replaced with fresh, clean material whenever it becomes wet, whenever it becomes finely ground and loses its property to hide the grain, whenever it becomes soiled and mixed with a large quantity of droppings. An inch of coarse sand should be kept on the floor, and this covered with straw or shavings to a depth of 4 to 6 inches.

Poultry diseases, especially those of a contagious nature, can be largely prevented by spraying the interior of the house four or five times a year with a complete disinfecting solution. The following is recommended as being very effective: Five quarts cream of lime, one pint of creolin, one quart of kerosene. This mixture should be agitated well and diluted with equal parts of water, and applied with a force pump through a spray nozzle. A thorough application of this solution will accomplish three things much more quickly and easily than if the solution were applied wtih a brush.

First. A good coat of whitewash will be applied thin, well spread and put on with force, into all the cracks and crevices. Second. The creolin will kill any disease germs which may be present in the house. Third, The kerosene will help to kill and drive out all red mites and to a certain extent body lice. The former can be entirely controlled by this formula, and the latter by the use of a good lice powder in connection with the above solution.

Lice and mites are a severe drain on a flock of laying hens if present in any number. Care should be taken not to let them get established. A clean house will mean more congenial surrounding and healthier birds.

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It Takes Some Work But Eggs Mean Money.

In caring for our dwellings we must keep constantly in mind the family comfort, so in caring for the hen house we must keep "Biddy's" comfort in mind if we expect her to repay us. The hen house must be kept dry, drafts avoided and ventilation provided. All droppings should be cleaned away once each week and oftener if the hens are kept in the hen house. If the floor is damp scatter plenty of litter over it. Provide plenty of grit, bran and water. If you have alfalfa scatter some leaves where the hens can get them.

The tidy housekeeper wants things to harmonize and a mixed flock of scrub chickens will not appeal to her. Get purebreds, for aside from their attractiveness, they will pay you in dollars and cents. True, eggs from purebreds will bring no more on the market, but the purebred hens will lay more eggs. And the purebred fowls, eggs and baby chicks will sell for more than the scrubs. For a farm fowl I believe we should have an allpurpose breed. I prefer the Rocks for they are a good table fowl, excellent winter layers, good mothers, and active without being destructive. And they are very beautiful.

If you want some extra early chickens set your hens in a good warm place, then when the chicks come provide a warm coop. You can make it so by lining all around with paper and putting litter in the bottom. I also put old carpet in the coop bottom on every cold nights or days. Yes, it takes lots of work, but it pays.—Minnie Hill.

Egg eating is a bad and expensive habit. but it seems natural for the hen to crave the material needed to form the egg shell. The plan I have successfully followed for years is to scald a mixture of one pint ground oyster shells and eight quarts of any grain mixture I am using at the time. The egg eating stops right away, but as a precaution I gather the eggs frequently for a few days so there will be no temptation to the hens. The plan is little expense and no extra trouble. Many have a box of the ground shells in the yard, so the hens can help themselves. My plan is better because the hen is obliged to take in some of the shells in her food.—A. A.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Where the White Nun Walks.

(Continued from Last Issue.)

That was the sound of a long shrill whistle. For I had drawn the whistle from the pocket of the cloak. In my desperation I had thought that at all costs I must summon help. The girls would be listening. Surely they would understand. And though it might draw discovery upon us—

But it didn't. You know it is not easy to locate the sound of a whistle. Although blown from less than twenty yards from where they stood, the men had no notion from which side it came. Only they understood it to be a note of alarm. They took to their heels and fled. I whistled and whistled and whistled, without a moment's intermission, and I heard their flying feet thudding and blundering.

It was a keeper who first rushed up.

"What's the matter here? Who's whistling?"

"Gregory, there are robbers—they have tried to kill and rob Mr. Talbot. They have hurt him. He is here——"

"After them—after them!" cried the faint voice at my feet. "Don't let them escape. Never mind me—after them!"

Then his voice failed, he seemed to fall back. But now there were sounds and lights approaching down the avenue and from many sides as well. Gregory dashed away calling on his underlings to follow, and I turned to face an excited contingent from the house who rushed upon me ,crying out:

"What is it? What is it? Has anything happened? Have you seen the ghost? Has the White Nun walked?"

"Ghost! White Nun!" I echoed in tones of lofty scorn; "it's Mr. Talbot with the jewels, and he's been shot at and pursued. But he has the jewels safe. I felt them in his pocket," and bending over him again I felt my fingers clutched and guided to the spot where I touched the case bulging in his pocket. But was it my fancy?—or was it some illusion of the senses? For it seemed o me that before my fingers were released they had been saluted by the lips of the wounded man. I thought I heard a whisper:

"I owe my life to you—thank you!"

They were all around him now. Lights were flashing from small electric torches which some of the company possessed and had brought out. I clasped the jewel case in my hands, but I stood aside to let the men get at the wounded messenger. I saw the light flash upon his face, white as death—yet it seemed to be the handsomest and noblest I had ever seen. I have not changed my opinion since! The girls closed round me and carried me off, leaving the men to transport their now unconscious charge to the house. Amongst the assembled guests we had a physician and surgeon both, and not a moment was lost in attending to his hurts. All the rest of us awaited the verdict with the greatest eagerness and excitement. I was made to repeat my story again and again, and it seemed quite clear that some of the daring burglars of the day had scented Tony's errand (they do get wind of things in the most marvelous manner, and the wedding of Eustace was no hole-and-corner affair), and had resolved to possess themselves of the jewels his best man was to bring down. But till Eustace himself appeared we could do little more than surmise how he came to be running down the Nun's Walk with a bullet somewhere in his person; and Judith wrung her hands in mock despair that it was not she who had made herself the heroine of that exciting episode.

When Eustace appeared there was a general rush. He stood up with his back to the fire of logs and told the tale.

"Oh, he'll do all right. Plucky chap as ever stepped. Bullet out and the shoulder dressed and comfortable, and he vows he'll be best man tomorrow whatever the medical authorities choose to say. I believe he will, too! He was with the irregulars in South Africa as quite a lad—laughs at laying up for 'a bit of a scratch and a thimbleful of blood.' We shall see——"

"But ,Eustace, how did it happen? Was he chased? Who shot him?"

"Well, I hope we'll get hold of the gentleman and find that out. What he says is that he must have been shadowed when he left the jewellers though he took every reasonable precaution. What he knows is that as he drove from the junction in his own dog-cart behind a very fast-stepping horse,—his own place is only about ten miles away from the junction in the other direction—he was aware of a small motor-car behind that seemed inclined to rush him—to run into him in fact. Suddenly he had a suspicion, and giving the reins to the groom he swung round and shouted to the men, asking what they were about. Next moment he heard the shot, and knew they were after him and the jewels. He also knew that he was close to the wall of Whiteladies, and that at intervals thehre were gates. He gave his orders to his man. He himself waited a moment and dropped off behind. The cart flew away in the darkness, he made for the gate into the grounds and vaulted over it. All would have been well but for the strong headlight on the motor. Those showed him up to the pursuers. They fired a volley. It was a mercy he was not killed on the spot. He felt the ball in the shoulder, but never paused a moment. Then he heard himself pursued, and flew at top speed towards the house. But he was bleeding fast. The inevitable happened. Though by his fleetness he distanced his pursuers, his strength collapsed, and he fell. If somebody had not been at hand to drag him into the shadows of the yews and cover him up and summon help"—Eustace turned towards me with a smile and a bow, and silent hands made a demonstration of applause—"there would have been tragedy at Whiteladies on the eve of the wedding. Luckily the traditions of Whiteladies live yet, and its daughters can play the heroine's part on emergency still."

Oh, if they only knew what a coward I had been really! But it was nice to be regarded as so brave! And then I had the jewel case to give over to Eustace, and there were the beautiful diamonds to exhibit to us all. Then in the middle came the news that the robbers had been caught! They had trapped themselves behind the walls of Whiteladies, failing to find the gate on their hasty return. They had dodged and doubled and run and hidden for quite a time; but the sporting dogs had scented them out one after the other, and now the police had them safe, and were pertty sure that Scotland Yard would be very glad to have news of them on many counts!

It was late before any of us slept that night, and we were early astir upon the morrow. I don't think I had slept more than an hour or two, for I was hautned by the recollection of that encounter in the yew walk, of the fall of thta tall figure in the light driving coat, of the horror of feeling pursuit coming nearer and nearer. And still my fingers seemed to tingle at the feel of the kiss laid upon them, and even in my dreams I seemed to hear the faint low voice which said: "I owe my life to you—I thank you!"

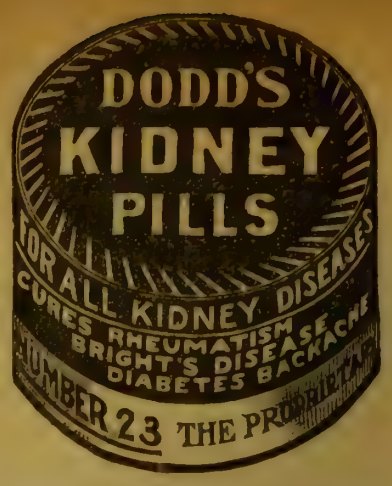
How bright the sun shone upon the wedding morning! How fair looked the bride! How blithe and happy were all faces! For our wounded hero was reported to have slept famously, and to have declared himself "as fit as a fiddle"; I think, until we actually saw him there in the church beside Eustace, his arm in a sling and his face absolutely colorless, though full of interest and animation, we scarcely believed that he would really rise and But hedress and play the part of best man. But he did ,and he and I walked side by side in the procession afterwards; and when they would not let him take a place at the long table, but set him down in a cushioned chair in the oriel, with a smlal table of his own, he looked round with his queer, delightful twisted smile to say, "But how can I cut up my own food? Isn't somebody going to be kind enough to help me?" why then I was simply pushed into a seat beside him, and we had our own little wedding-breakfast there to ourselves. Then when the toasts were drunk there was a special one for "First bridesmaid and best man," and almost directly the wag of the party leaped to him feet and gave—

"To the next wedding at Whiteladies," nad I felt myself getting redder and redder and hotter and hotter, because everybody turned and stared at us in the most barefaced way. And when the awful moment was over Tony got hold of my hand beneath the table, and if he did not kiss it again—it seemed to me exactly as though he had!

Tony stayed a fortnight at Whiteladies after that; and I spent the winter there. And he came over every week and sometimes stopped a night or two.

And now there is to be another wedding very soon at Whiteladies. And the family party is gathering fast, and Judith waltzes me up and down the long galleries, and makes me talk of Tony, which I simply love to do.

"You lucky girl! We all adore Tony! And to think how I have been done out of my chance! If only I had gone that night! I declare I should have been twice as brave as you" (that would not have been saying much, I thought). I should have caught the whole gang single-handed, and simply covered myself with glory! But remember, all you girls, it's my turn now! I'm going to tempt my luck as Maude did. I'm going to be a three-times bridesmaid next week! And don't any of you forget that when the last evening comes, I'm going to be the one to run the gauntlet of the ghost—I'm going to see if there won't be a husband waiting somewhere in the shadows for me in the dark yew tunnel where the White Nun walks!" —The Quiver.



The Dominion Atlantic Company are preparing information for the use of Tourists who may visit Nova Scotia next summer, and this will include a complete list of Hotels and Private houses in Town and Country board. No charge is made to advertise in the railway publications, all hotel and boarding-house proprietors should write at once to the General Passenger Agent at Kentville for the necessary forms on which to furnish such information.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

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Mrs. Wynn Tells How Lydia E. Pinkham's Vegetable Compound Helped Her During Change of Life.

Richmond, Va. — "After taking seven bottles of Lydia E. Pinkham's Vegetable Compound I feel like a new woman. I always had a headache during the Change of Life and was also troubled with other bad feelings common at that time—dizzy spells, nervous feelings and heat flashes. Now I am in better health than I ever was and recommend your remedies to all my friends."—Mrs. LENA WYNN, 2812 E. O Street, Richmond, Va.

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The Little Ones in Your Care.

Do You "Overwork" Your Baby?

If your baby is fretful, cries altogether too much, does not keep down his milk as he should and is becoming thin and pale, the chances are very great that you are overworking him.

"Overworking" is a phrase of my own and needs a little explanation. By it I mean that you try to amuse the baby too much, or perhaps you are amusing yourself under the guise of amusing him. The best way to make clear just what I mean is to relate an actual experience—and there are altogether too many of them—which I saw in a home where the pride and joy was a chubby little chap fast being made a wreck.

I had called at the noon hour to attend another member of the family. The farther came in from work and straightway made for baby's crib, where the youngster sat quietly playing with his toes.

"Chick-a-choo, chick-a-choo! How's daddy's big man today!" inquired the father, and with every "chick" and every "choo" he jabbed his finger into baby's ribs. Then he picked him up and toossed him high. Then he hung the poor little thing in the crook of his arm and bored into him with his nose and bristly mustache.

Baby puckered his little face and squirmed and gasped and began to cry.

Later big sister came in from school and proceeded to trot baby on her none too plump knee. Up and down she trotted him, and chanted soemthing about "Ride a gray horse to Danbury Cross." Baby stopped smiling. His breath began to come "ug-ug-ug" with every jounce. The knee hurt him an dhe proceeded to cry again.

And then an aunt played with him for a while, and the hired man came in and tickled baby's feet, and brother danced a paper so close to baby's eyes that he almost looked cross-eyed at it. Mother took him up when the others had got well into their meal and she had a moment. Baby was fretful and hungry, especially hungry, but before feeding him she jounced him up and down, dandled him on her knee, made him "shake a da' da' " to everyone at the table, shaking his tender little arm until his tiny wrist must have ached. By the time she got him well jounced up and thoroughly upset, she proceeded to feed him. It took him five minutes to become quiet, and the milk he took during that five minutes when he was upset did not digest at all. It never does under such circumstances. Father tossed him up again before he left and chucked him in his tiny ribs until he was crying lustily. Grandma came out. She hobbled over to her son and took the baby away from him.

"You won't have any baby if you jounce the daylights out of him all the time!" she exclaimed.

"But he wont' keep quiet," protested the mother.

"Just give him a chance!" said grandma, and she put baby down on the floor on a quilt, up against a pillow. In about ten minutes baby was cooing and looking about and playing with his toes. He was just beginning to get comfortable.

Then I chipped in with this dear, old-fashioned grandmother, and told everyone, from little brother up through the list, that they weer over-working this baby—they were shaking him up inside, actually husting his little legs and arms and ribs, and especially the end of his tiny weak spine, by jouncing him.

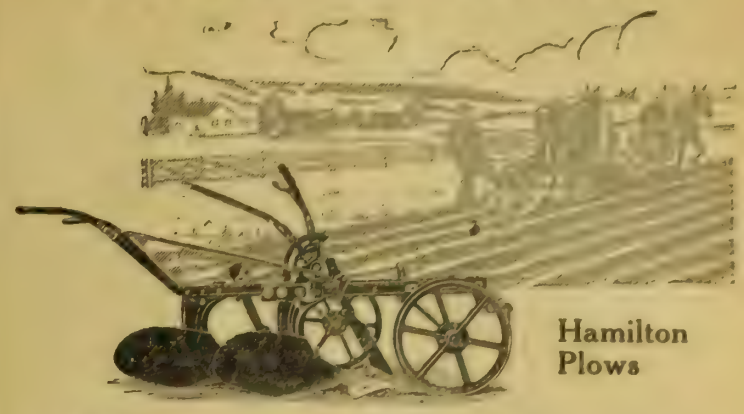
I gave them all a "talking to," and tried to explain just how they were really selfish.

"You call it amusing this baby," I said, "but you love this little chap and you are really amusing yourself by handling him so much and so roughly. If you really love him, give him a chance ot grow. If you have any imagination sit down for a moment and imagine that a great big giant three or four times as tall as any of you came along and tossed you up in the air and jounced you on his knee and poked you in the ribs and snuggled his great hairy face down into your neck, and repeated this about twenty times a day. Just picture this to yourself. That's what is happening to your baby. Give him a chance!" I know they called me a "grouchy old doctor," but it had its good effect. I have told hundreds of other parents the same thing.

You can love your baby without hurting him. Remember, he is very tender, all his bones are mostly gristle, all his internal organs are only partly developed. When you toss him around and shake him up you are doing him a great injury.

Give plenty of food, dry clothes and a clean, cheerful and wel-ventilated room, and baby will sit down on a blanket, braced up against a pillow, or remain in a baby pen and amuse him-

A Great Line of Plows



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WHEN you need a plow for turning sod, clay, loam or rocky soil, go to the **Deering** local agent and choose your plow from the **Hamilton** line he handles.

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self an hour at a time by the very simple means of plucking at his toes and pounding on the blanket with his chubby fist.

Babies keep extremely busy naturally. They have a great many muscles to exercise, a great many joints ot strengthen, and a very great amount of growing to do. Good old mother nature tells them how to do this in the best way. Now when it comes to "coochy-cooing" baby by poking him in the ribs with a finger, or tossing him up in the air, or grabbing hold of his dress at his stomach and playfully shaking him as you would a puppy, you are not amusing him in the least. You are abusing him, overworking him and getting him so that he cannot be left alone a moment.

I do not mean to let the baby entirely alone. It is natural to want to hold the baby, to pat his little hand, to play with his pink little toes, to take him out in your arms for a "walk" in the garden, and these things are all right in their way. It is the overdoing it that makes the trouble. If the right sort of a start is made, if baby is not tossed and mauled about all the time at the beginning, he will amuse himself far better than an adult can amuse him, and he will not cry so long as he is perfectly healthy, has dry clothes and is not hungry.—Dr. A. M. Hughes.

When the Grave Yawned for Him

SANDY GOULETTE TOOK DODD'S KIDNEY PILLS FOR BRIGHT'S DISEASE

Now He Can Do His Day's Work As Well as He Could Ten Years Ago—Offers Proof of His Statement.

Old Fort Bay, Labradore, Que.—February 4th. (Special).—Cured of Bright's Disease when the grave yawned before him, Sandy Goulette, an old settler here, wants all the world to know that he owes his life to Dodd's Kidney Pills.

"I was swollen out of shape from head to foot. I was so short of breath I could hardly speak," Mr. Goulette states. "The doctor could do nothing for me. The minister gave me the holy sacrament and a good old priest came and told me that I could not live much longer.

"I was sick all winter and in the spring. I telegraphed two hundred miles for two boxes of Dodd's Kidney Pills. I took three pills the night they came and I got relief before morning. I took Dodd's Kidney Pills and they cured me.

"If anyone doubts this statement they can write me and I will give them names of people who know me and who will vouch for me. I am able to do my day's work as well now as I could ten years ago."

Dodd's Kidney Pills are no cure-all. They simply cure the Kidneys.

Are you Making or Breaking Your Child.

Undoubtedly I am going to shock a great many dear parents when I state most emphatically that the old-fashioned mother, who, exclaiming in righteous anger, "I'll whale you within an inch of your life," took her young hopeful out in the woodshed and did "whale" him with a big switch until ridges appeared on his legs and thighs, did not harm her child one-tenth as greatly as the tender-hearted mother who shut her boy up in a dark closet for two hours!

And I am absolutely certain that hundreds of well-meaning fathers are going to sneer at my statement that the old-fashioned father who used to take the end of a tug from Old Dobbin's harness, turn his big boy over his knees and "lambast" him with the aforesaid tug until son's howls could be heard in the next county, was doing his son a real kindness, as compared to the other sort of father who sends his erring son upstairs to bed without his supper. Nevertheless all this is true.

I am oldfashioned myself in the matter of corporal punishment for children. "Spare the rod and spoil the child" is solid sense. But pelase, I beg of every parent, never attempt to punish your child unless you can pause first and use good, sound judgment.

"Strike while the iron is hot," is good business sense, but to strike while the parent is hot is a crime against the child. First of all, then, wait until you have cooled down before punishing your child. Better let him go unpunished forever than strike him when you are 's'eeing red" with anger—for anger has neither conscience, nor a spark of common sense, nor an atom of judgment, nor a grain of fairness. Better let your child come up uncorrected than make a coward, or a dyspeptic, or a defective of him, by means of the wrong sort of corporal punishment.

If every parent who has occasionally vigorously boxed his child's ears could know the actual number of men and women going through the world today who are stone deaf because their ears were boxed, he would pale in fright and sickness at the knowledge, and never box a child's ears again.

If every parent could know the number of poorly nourished, dyspeptic people in the world today who became such solely because they were frequently sent away from the dinner table before they had half finished their meal, or sent up to bed supperless, no offence their cihldren could commit would ever inspire him to do such a thing again.

If every parent could know the actual number of nervous wrecks, physical cowards and long-suffering men and women terror-stricken at the dark, whose condition is due solely to the fact that their parents used to shut them up in dark closets, he would fight the person who even suggested such punishment of his own children.

"I have never been able to hear a sound in my right ear," a very well-known artist told me once, "since the day my mother 'snapped' me in the ear with her finger, upon which was a heavy brass thimble. It broke my ear drum, and before the injury was discovered it was too late to save my hearing. I had accidentally dropped a saucer and broken it."

One mother caught her little girl eating jam from a jar she had been forbidden to touch. This mother didn't believe in whipping a child, so, for punishment, she made the little girl eat all the jam in the jar. Fortunately it was a small one, but at that I was afraid for a while that this mother wasn't going to have any little girl, and I told her so.

While I boast of being old-fashioned in the matter of punishing a child, I am not old-fashioned enough to believe in spanking, I know that children have been spanked from time immemorial. I know this is because of the general belief that the blows fall on a locality where there can be no physical harm, but plenty of pain. If this were true I would be for spanking first, last, and every time a child needed correcting. But it isn't true, because not many people know how to spank a child without hurting him. The child squirms too, and the result is that many a youngster has been pounded squarely on the tender base of his little spine, with some fearful results. Cases of paralysis, of crooked and otherwise injured spines have come out of such spankings.

If you are going to punish a child in that particularl locality, use a little switch, not a heavy one, but a very light one, so that there will be plenty of tingling and smarting, but no hard blows. A child may be switched about the legs too, without injury, but never with anything heavier than a switch.

And again, remember that your child is going to be young only a little while and, God willing, an adult for many years. And while an adult he cannot run out and play. His play days are short; let him have every one of them, every hour and minute that can be spared for his outdoor romping. Your child needs every minute of sunshine and every opoprtunity to run and laugh and exercise.

If you are doing any of these things I have warned against, you are breaking your child—breaking his health and disposition and digestion and tendency to smile and ability to be brave. But if you are waiting until your anger has passed before administering punishment, and if you do administer it with good judgment, as I have suggested, you are really making him. Every child need a little punishment, and deserves it at times, but no child deserves any treatment that will injure his health and happiness.—Dr. W. Peabody Bartlett.

RENNIES SEEDS

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Dyeing on the Farm.

"What are you going to do with those dresses?" asked my husband one day in the early spring, coming into the living-room and finding me busy with a number of old dresses belonging to Little Daughter. They were dreadfully faded, but the cloth was still fairly strong, and except for being short, they still fitted.

"I'm putting on cross-way bands on the bottom of the skirts," I replied, "and bye and bye I'll dye them and she can wear them during the vacation, and save her school-dresses for the fall term."

"Nonsense! Don't fuss with them!" he objected, eyeing the sorry lot with obvious disfavor. "Get some new ones if she needs them! Those aren't worth the work!" For Husband liked to see Little Daughter prettily dressed.

Nevertheless, I kept on with my work, and when the dresses were laid away to await the dyeing-day, each was let down with a cross-way band made of factory cloth. I paid ten cents for a package of pink dye, and had a dyeing. The result was three really pretty pink dresses and a pair of pink bloomers, which she is still wearing, and which have reconciled her father to the old garments. Another dress was later dyed blue.

A relative, who lives in town, frequently sends me the outgrown rompers and Russian suits of her little folk, for me to use for my small boy and baby girl. When these are very light-colored or faded, I dye them navy or dark blue, cut off the long blouses into short ones, and the boy has some neat play-suits, while the baby-rompers are saved until I have a dyeing, and colored pink or blue.

My husband had a number of faded light shirts, and several dress-negligee which had come to mending. I dyed these dark blue, together with several of his faded workshirts, and now he has some neat-looking dark shirts which would otherwise have either been discarded or worn looking dirty all the time. When the shirts have no soft collar, I put one of factory-cloth on before dyeing, and it looks all right when the shirt is done.

For a long time I had wanted a lavendar dress, but was afraid the color would not be becoming. I had an old lawn skirt, a lawn shirt-waist, and a white drop-skirt and corset-cover which I decided to risk. I dyed them all with half a package of purple dye, and produced a really pretty lilac dress, when worn over white, and a darker shade when worn over the foundation suit that I colored. I also put in an old silk girdle which took a little different but harmonizing color, and adds immensely to the gown. I cut the neck out and wear a deep white lace collar with it, and everybody says it's very becoming. As for house-dresses, I always dye them when they get faded, and so get the last bit of wear out of them.

I have dyed table-covers, ribbons, winter caps and mittens for the children, their little coats and light stockings which have been given me. When dyeing garments, I usually put in a piece of white cloth, to use for mending.

Just now I am saving some cloth grain-bags in which my husband buys a certain kind of feed, to make into a comforter. I shall dye them blue for one side and red for the other, and already have the blue ones dyed. Even the string with which they were sewed I have ravalled out, wound into

a ball and intend to use to tie the comforter.

I use comemrcial dyes, and follow the directions on the package. I mention the brand, because I could not guarantee results with other kinds which I have never used. I do not maen this as in any sense an advertisement, but simply a pointer to some farm wives, by which they can dress themselves and children better, and have nicer-looking things in their houses. Many seem to think dyeing is a very difficult thing. It is no more so than baking bread or cake, but you must follow the recipe (directions) in both cases, or you can't expect perfect results.—Mrs. W. S. W., in Maine Farmer.

Boiling Sugar.

To boil sugar is one of the fine points of the science of cooking, but the uses of the different forms of boiled sugar are so varied that it is worth some practice to acquire the necessary skill.

As the sugar boils it passes rapidly from one stage to another and must be watched carefully. Success depends on one's ability to tell the exact point at which to arrest the cooking. It is extremely difficult to tell by the ordinary way of testing by dropping it in water or by dipping in the fingers and as a second's time will make all the difference between good and bad results, every scientific cook should have a sugar thermometer and syrup gauze just as any scientist needs proper instruments. By the aid of these two utensils many things that have seemed difficult for the amateur cook to attempt become simple, such as making perfect fondant, spun sugar and good candies.

As the sugar boils the great care is to prevent its granulation. The tendency for sugar is to resume its original crystalline form. To prevent this the liquid must not be jarred or stirred from the time the sugar is dissolved. If crystals form about the edge of the pan above the sugar they must immediately be wiped away with a brush (kept for the purpose) dipped in cold water. If they are allowed to remain the whole mass will granulate. A very little cream of tartar (a scant half salt-spoonful to a pound of sugar) added at the beginning makes the sugar less liable to granulate.

Sugar has a great affinity for water and the atmosphere should therefore be very dry. Never attempt to boil sugar on a damp day or when there is any steam in the room.

The different stages given below follow very quickly after each other, so that the heat should be moderate and careful attention given it.

To arrest the cooking quickly, as is necessary, place the saucepan quickly in a larger pan of cold water. If by accident it passes the right stage, granulates, or hardens, add a spoonful of water and continue the boiling. No sugar need ever be wasted.

The Degrees

Following are exact degrees of sugar boiling and their tests:

215 degrees, small thread stage.
217 degrees, long thread stage.
220 degrees, little pearl stage.
222 degrees, large pearl stage.
230 degrees, the blow stage.
232 degrees, the feather stage.
236 to 238 degrees,, soft ball.
246 to 248 degrees, hard ball.
290 degrees, small crack.
310 degrees, crack.
345 to 350 degrees, the caramel.

How To Test It.

Small thread: Press a little of the syrup between the thumb and fingers. A ring will form and a fine thread be drawn out which breaks at once and returns to the drop. Large thread: the thread draws a little farther than the first. Little pearl: thread stretches long between the fingers, but breaks. Large pearl: thread stretches long between the fingers and does not break. The blow: twist a broom straw into a loop. When dipped in a film will fill the loop which may be blown into a bubble. The feather: fine threads will fly from the bubble. Soft ball; a little dropped in cold water will form a soft ball. Hard ball: it will form a hard ball. Small crack: when dropped in cold water will break. Crack: breaks off sharp when put in cold water and crackles when chewed. The caramel: it assumes a yellow color and care must be taken that it does not burn. The cooking should be arrested instantly.

If sugar at the caramel is used the work must be done with great rapidity, as it hardens quickly. If it does harden before all is used, add a spoonful of water and reboil.

Correct Position of Handling the Brush.

Did it ever occur to you that the surface of the back amounts to one-sixth of that of the entire body?- The osteopath will tell you it is the source of the entire nervous system—and we cannot ignore the opinions any longer of those valuable practitioners. It is from the spine that they treat every organ of our bodies—for that is the foundation of either health or sickness to the entire body. One-sixth of the area means also one-sixth of our skin pores and glands, yet how many of us take the trouble in the daily bath to keep these little workers clean and healthy, to perform their share in throwing off the waste from the body?

It is next to impossible for most of us to reach all parts of our backs and do good, vigorous scrubbing, so here with where the long-handled bath brush is needed. The picture shows how easily it can be made to cover the entire back. Cleansing the pores thoroughly is only one part of its work, as the greatest advantage will come from the splendid circulation it will create all along this important nerve centre, radiating health to every organ of the body. It will also make the skin firm and fine-grained, taking off much of the superfluous fat so many women are apt to get, especially over the top of the corset line.

The arm exercise that attends the use of the back scrubbing rounds the elbow and develops the chest and arms, adding still another point in favor of establishing the habit of using the brush.

Serviceable Suggestions.

As the truly conscientious housekeeper tries to learn something new each day about management of her domain, the idea of a holder for suggestions is not bad. The holder is a small empty picture frame hung above the work table. Recipes to be tested or suggested helps are slipped into it to be read, studied and tried as opportunity offers.

Some kitchen tables have glass tops and the clippings can be slipped under the glass instead of into the frame, or being pinned onto the window curtain or the wall.

Serviceable suggestions that you may want to rememebr are the following:

Kerosene removes stains from tin ware, porcelain tubs and varnished furniture; saturate a woolen cloth and rub with it; the odor evaporates.

Old newspapers clean stoves beautifully, save floors, table tops and fresh aprons when spread over them, as well as being useful for polishing kitchen windows.

A small wisp brush is better for cleaning greasy pans and kettles than the string mop you use, for the dishes. You can make these wisps by tying bunches of straw from old brooms together, but you can buy them two for five cents. A little soap powder sprinkled on them makes a fine strong suds for the tinware and cooking utensils.

Wet the broom when starting to sweep; it makes it more pliable and less hard on the carpet's pile and prevents dust from rising.

Gas and lamp chimneys, earthenware and baking dishes are toughened before using by being put into cold wtaer that is heated gradually until boiling and then cooled slowly.

The metal taste aparent in iron and tinned ware may be removed by boiling a little hay in it. In Irish dairies everything used to contain milk is scalded with hay-water, as it is a great sweetener of iron and wooden articles.

Powdered gum champhor is said to drive cockroaches away.

Boiled linseed oil applied to the kitchen floor gives a finish that is easily cleaned. It may also be painted over the draining board of the sink and does away with hard scrubbing. It must be renewed twice a year.

A lump of charcoal should be kept in the refrigerator to keep it sweet. When putting your best tea or coffee urn away drop a bit of charcoal in it and prop the lid open with a tooth pick or tiny stick.

Grease may be removed from unpainted boards by putting soft soap on the spot and holding a hot flat iron above it; wash thoroughly afterwards.

To take rust from flat-irons tie yellow beeswax or parafin in a cloth, and when the iron is warm, but not hot enough to use, rub with the wax and then rub through sand or salt. This will also remove rust from iron.

Old stocking tops make good dusters when sewed together; they also make good polishing cloths for oiling and rubbing down floors and furniture. Several stocking tops cut into strips and dipped in parafin oil make a fine dustless mop for hardwood floors.

Steel carving sets and knives should be rubbed with a bit of suet before being put away. Do not wrap steel or silver in woolen or in white canton flannel, the sulphur in these materials injures the metal.

Delicate china with gilt bands and floral decorations should not be wiped with the ordinary crash or kitchen towel. Use thin cloths, or scald and drain dry, and the figures will keep their beauty to the end.

The Provincial Chemical Fertilizer Co., Ltd.,

ST. JOHN, N. B.

announce that in addition to their regular Brands of Fertilizer, so well and favorably known throughout the Provinces, they are prepared to furnish

Pulverized Lime Stone

and Land Plaster

on very favorable terms, in either bulk or bags and solicit inquiries.

POULTRY SUPPLIES.

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience**, we know better than any doctor: and thousands have proved there is **hope** even **for the hopeless** in my method of home treatment. If you suffer from pain in the head, back, or bowels, **feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid**, to prove to yourself that these ailments can be easily and surely removed at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured**, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all.—**young or old.** To **Mothers** of **Daughters**, I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask for the free treatment to-day**, as you may not see this offer again. Address:

MRS. M. SUMMERS BOX 309, WINDSOR, ONTARIO

Gas in the Bowels.

Gas in the bowels is produced by stasis or stagnation, almost invariably evidence of insufficient intestinal activity. Whenever the food materials are delayed in their movement along the intestines, fermetnation and putrefaction occur, with the development of gases. When gas accumulates in such a quantity as to produce distention of the intestine, the result is a final spasmodic contraction accompanied by pain; this is known as colic. Immediate relief may often be obtained by means of a large, hot enema; the quantity of water required is usually two or three pints; the temperature should be 100 deg. to 105 deg. The addition of a little soap to the water is helpful. When the check valve placed at the juction of the small intestine with the colon known as the ileocaecal valve, becomes incompetent, the colon, when it contracts to expel its contents, discharges at both ends and a portion of the liquid faecal matters are forced back from the large intestines into the small intestine. In such cases the enema affords only partial relief; the gas distension still continues. For definite relief it is necessary to take measures to secure increased intestinal activity. It has now been ascertained that with very rare exceptions gas in the stomach consists chiefly of air which has been swallowed. The stomach is irritated and involuntary swallowing of air occurs. This morbid condition, known as aerophagia, is somewhat akin to hiccough. By an involuntary movement air is sucked into the stomach; after a time the air is returned, and as soon as the accumulation recurs, the belch is repeated. The gas expelled is, however, for the most part, made up of swallowed air. In such cases the remedy must be traced to the cause of gastric irritation. In a majority of cases the stomach is the seat of the hyperacidity; that is, an excess of gastric juice is formed. To relieve this condition the diet should be bland; that is, non-irritating. Mustard, pepper and other condiments should be avoided, with the exception of a sparing use of salt. Tea and coffee, and even the free use of water and other liquids at meals, must be avoided. Flesh meats of all kinds stimulate the acid-secreting glands of the stomach. Olive oil taken in a dose of one or two tablespoonfuls at the beginning of each meal lessens the formation of acids. The application of a hot bag over the stomach for half-an-hour after each meal is beneficial, but the most definite benefit will be derived from increasing the activity of the bowels. Normally the bowels should move after each meal. This prevents the toxema to which gastric irritation is in most cases due. —"Good Health."

Exercise for Indoor People.

Do you work indoors? Are your exertions more mental than physical? If so, let me suggest that you read supplement 24 to public health reports by Dr. F. C. Smith of the U. S. health service.

In this timely publication he warns us of the rising death rate after the age of forty and blames our complicated social and business life for this condition. As an antidote for this state of physical inertia and mental strain, he suggests—

Exercise and recreation which should be inseparable, i.e., "A man's exercise should, if possible, be his hobby."

For those wishing "a short life and a merry one," this accommodating pamphlet has a suggestion also. Try heavy athletics for Dr. Smith says that they are almost certain to shorten life, because the after effects of severe exertion are harmful.—Marion V. Higgins, Colorado Agricultural College, Fort Collins, Colorado.

Are these your Symptoms ?

PROSTRATION
LACK OF ENERGY
BRAIN FAG
PAINS IN THE BACK
STOMACH CATARRH
SLEEPLESSNESS
DEPRESSION
NERVE EXHAUSTION
FOOD-SICKNESS
LOSS OF FLESH
DEBILITY

Why You Should Use Dr. Cassell's Tablets.

1. Merit has won for Dr. Cassell's Tablets the largest sale of their class in the whole world. They are the most popular restorative medicine among all classes, the family remedy in homes unnumbered.
2. Dr. Cassell's Tablets are guaranteed absolutely pure in composition, they contain no drastic or dangerous drugs, the most delicate may take them with every confidence that benefit and nothing but benefit must follow.
3. Dr. Cassell's Tablets are equally suitable for old or young. From infancy to extreme age they are the great health builders.
4. The test of time and world-wide success has proved Dr. Cassell's Tablets to be the supreme remedy for all run-down conditions of nerve or body, the surest restorative for worn-out men and women.
5. Last of all Dr. Cassell's Tablets are a British remedy, made in Britain, by British Pharmacists, financed by British capital, and sold throughout the British Empire.

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised modern remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five. War Tax Extra, 2 cents per tube.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

Dr. Cassell's Tablets

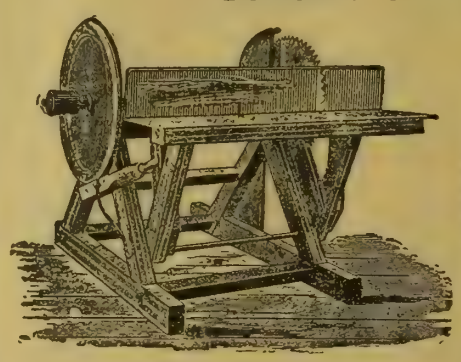
Britain's Greatest Remedy

GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

Sussex Wood Cutters Cut Expenses

Consult Our Quality Line Before Buying



Short Swing Wood Cutter

Wood Cutter Saws guaranteed at the right price. All sizes. Prompt delivery.

Flat Roller Table.

CONVENIENCE ECONOMY DURABILITY

are the three money-making qualities embodied in our Wood Cutting Machines. No frail parts to give out in a season's use. Built to last a life time. Frame is made of well seasoned birch, bolted and mortised; table of heavy steel plating in one piece.

Swing Table Machines built on skids, bearings supplied with compression greese cups. Especially adapted for use with gasoline engines. Made in four styles—Long Swing, Long Swing Improved, Short Swing, Flat Table.

Ask for our Catalogue and Prices, it will pay you.

Remember we also manufacture Trenholm Gear Hay Presses, Grain Grinders, Root Pulpers, Feed Boilers, etc.

The Sussex Manufacturing Company, Limited, Sussex, N. B.

Sick Children Made Well

Every mother likes to see her children the picture of healty and vitality.

Trade Mark

I find that the stomach is a source of constant trouble to some children, and there is a constant need of some safe remedy. A disordered stomach, too, frequently breeds worms, either stomach worms or pinworms.

You can absolutely depend upon Dr. True's Elixer to expel worms and tone up the stomach, bowels and general health.

Dr. True's Elixer has been on the market for over sixty years. That's proof of its efficiency. Get the time-tried Dr. True's Elixer, the Family Laxative and Worm Expeller. Good for adults also. At your dealers, 35c, 50c and $1.00. Advice free. Special treatment for tapeworms. Send for book.

Knowlton, Que. Dr. True

Short Courses in Agriculture on P. E. Island.

The proposed series of Short Courses were commenced at Palmer Road on January 10th, and have been continued at O'Leary, Egmont Bay and Mount Carmel. Many of the people had to drive a considerable distance, and some boarded in the vicinity during the entire course. The programs were arranged to meet the most urgent needs of each community. The opportunity to discuss conditions in their home district, without conisdering those in some other part of the Island appeals very strongly to all the farmers. Most of those attending were at every session.

The lectures commenced at 9.30 a. m., and concluded at 11.30 a.m., and from 2.00 p.m. to 4.00 p.m., and 7.00 p.m. to 9.00 p.m. Such an arrangement allowed time to do the necessary chores and drive two to three miles. The large number of young men attending, considering that many have enlisted, speaks well for the communities.

The course at O'Leary was conducted under difficulties; the weather being very cold and many drove seven and eight miles to attend. The course at Egmont Bay and Mt. Carmel were conducted only six miles apart, but the attendance warranted the work put upon them. The earnest manner that was apparent encouraged everyone to put forth every possible effort. Revs. Gauthier, Boudreault and Arsenault, suported the courses very heartily, not only by encouraging the people, but by taking an active part in most of the sessions.

The attendance was:

	Sessions.	Attendance.
Palmer Road.....	13	99
O'Leary	9	60
Egmont Bay	14	110
Mt. Carmel	13	127

Ladies attended all the poultry lectures, and occasionally others, especially at night when the lantern was used.

The members of every branch of the Dominion Department of Agriculture cooperated heartily, with the Provincial Department, thus making it possible to place on well balanced courses. At every point, requests were made for a course to be held next winter or earlier if possible.

All of the courses as yet have been held in Prince County, and the necessary preliminary organization was done by W. J. Reid, B. S. A., the District Representative. He also gave the larger number of the live stock lectures and demonstrations during the courses.

Mr. J. A. Clark, of the Experimental Farm, took charge of all the work in grains and lectured on tillage. Much practical work was done with wheat, oats and barley. Leslie Tennant, B.S. A., was reponsible for the weed seed and grass lectures. Mr. Morrow discussed the care of milk and Mr. Marcellus represented the Poultry Division.

Plant diseases and potato work came under Mr. Murphy, plant pathologist at the Experimental Farm.

The marketing of wool was demonstrated by Mr. Thomson of the Live Stock Branch. Under drainage is a live topic in the Western part and created considerable interest. The destruction of the English sparrows was one of the lively topics and the discussion probably will result in local organization.

Community interest and organization may be one of the most potent influences emanating from the courses; probably never before was the attention of the entire communities concentrated on a common subject for one week.

The next course will be in the Consolidated School at Mt. Herbert. The school has not been used for some time and it is hoped that it will be put to community use continually.

The publisher of the best Farmer's paper in the Maritime Provinces in writing to us, states:

"I would say that I do not know of a medicine that has stood the test of time like MINARD'S LINIMENT. It has been an unfailing remedy in our household ever since I can remember, and has outlived dozens of would-be competitors and imitators."

Vacancies in Offices

Caused by so many enlisting for military service, have caused a great demand for well qualified young men and women.

Now is the time to qualify.

Catalogues to any address.

THE ST. JOHN Business COLLEGE

S. KERR
Principal

Two Weeks Short Course in Agriculture.

At Woodstock, March 20, to April 1.

The New Brunswick Department of Agriculture is arranging for a Two Weeks' Course in Agriculture for farmers and farmers' sons to be held in the Agricultural School at Woodstock, from March 20 to April 1. No effort is being spared to make the course as practical and interesting as possible, and the staff of instructors, in addition to the officials of the Provincial Department of Agriculture, will include Mr. S. J. Moore, Seed Commissioner for the Maritime Provinces; Mr. W. W. Hubbard, superintendent of the Dominion Experimental Station, Fredericton; Mr. G. C. Cunningham, Dominion Expert in Plant Diseases for the Maritime Provinces, and other leading agricultural authorities in their own special subjects. The first five days of the course will be devoted entirely to lectures and practical work in fertilizers, soil management, insect pests, plant diseases and spraying, leading up to the work of the last seven days which will be devoted exclusively between field crops and live stock. If you cannot spare the time to attend the entire course, be sure and come to those sessions in which you are most interested. Remember that there are no fees and all the lectures are free.

Board and room may be obtained in Woodstock for from $4.00 to $4.50 per week, and a list of suitable boarding houses will be provided to students. Applications for enrolment in this course will be received up to March 18th but should be sent in as early as possible in order that the Department may have an idea of the approximate attendance and make preparations accordingly. It is hoped to publish the full programme of the course in the next issue of this paper.

Intending students should purchase a one-way, first-class ticket, and secure a Standard Certificate from the ticket agent, or if travelling by more than one line, secure a certificate from the agent of each line. These certificates, when signed by the authorized official of the Department of Agriculture, will entitle the holder either to return fare free or at a much reduced rate, depending on the number of students in attendance.

Send applications for enrolment and inquiries for further information to A. G. Turney, Fredericton, N.B.

PEERLESS Long Span Gates

are so rigid—so strong—so thoroughly and scientifically braced that even after years of service they retain their original firmness. If properly hung, there will be no dragging on the ground—no necessity for having to lift or carry the gate open or shut. It will always swing easily and always hold its shape.

Made of Best Materials

Frame work of 1¾-inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with No. 9 Open Hearth galvanized steel wire—built for strength and durability—weather proof and stock proof. Send for free catalog. Ask about our farm and poultry fencing, also our ornamental fence and gates.

Agents nearly everywhere. Agents wanted in open territory.

THE BANWELL-HOXIE WIRE FENCE COMPANY, Limited
Winnipeg, Man. Hamilton, Ont.

Boys' and Girls' Poultry Club Competition.

Rules and Regulations

1. Open to boys and girls of sixteen years and under, sons and daughters of farmers in each county in New Brunswick.

2. A boy or a girl on the farm may be the competitor, but only one in a family can enter the contest.

3. Each competitor must do all the practical work himself or herself as the case may be, but can receive advice and direction from parents or guardian.

4. Each boy or girl entering the contest must set the eggs under hens or in incubator, attend and manage the incubation, care for, feed and raise the chickens to roaster age in the fall. (April and first week in May best time to hatch out the chicks.)

5. The breeds to be used in the contest are pure-bred Barred Plymouth Rocks, Rhode Island Reds, Wyandottes and Orpingtons or high grade crosses from pure-bred males of above breeds. Only one breed must be used by each contestant in order to have the lot all alike and uniform. Suitable eggs can be purchased for incubation if not produced on the farm.

6. The Department of Agriculture offers three prizes to the competitors in each county for the best dozen chickens raised by the farmer's boy or girl in each county according to conditions in Section 4.

7. Twelve or more chickens (cockerels preferred) of any of above breeds mentioned in Section 5 to be put into a fattening crate or pen the third week in October, 1916, and fed according to directions supplied to each contestant by the Provincial Poultry Superintendent.

8. Birds to be fed at least fourteen days and not longer than eighteen days, then starved twelve hours and killed by bleeding in the mouth, plucked dry, undrawn, shaped and packed in a box of the proper size to contain twelve roaster chickens and expressed to the Poultry Superintendent, N. B. Cold Storage, St. John, N.B., with the name a naddesrds-Y with the name and address of shipper on the box, from the 7th to the 10th of November.

9. Information as to above method will be supplied by the Poultry Superintendent, who will be judge and will award the prizes according to merit of the exhibit from each county. In addition to the prize, the chickens will be sold at the highest market price and same remitted to the shipper.

10. Prizes will be awarded for the largest, best fleshed, best quality, best conditioned, best dressed and best packed box of twelve chickens. The contestant is allowed to select for competition the best twelve birds from his or her own flock.

11. Each competitor's work during the competition will be subject to the

OLEMNTRA	BEUQCE	OTOROTN	PNIENGIW

Can you arrange the above sets of jumbled letters into the names of four well known large canadian cities? If so, you can share in the distribution of the prizes below. It is no easy task. But by patience and perseverance you can probably make out 2 or 3 of them. To the person who can make out the largest number we will give the sum of One Hundred Dollars. To the person making out the second largest number the sum of fifty dollars. To the person making the third largest number the sum of thirty dollars. To the person making the fourth largest number the sum of twenty dollars. Should two persons send answers equally correct, the first two prizes will be divided between them (each receiving $75.00). Should three send in equally correct answers, the first three prizes will have to be divided (each receiving $60.00). Should four persons send equally correct answers, the whole sum of $200.00 will be equally divided (each receiving $50.00) and so on in like proportions, provided they comply with a simple condition about which we will write as soon as answers are received. We do not want a cent of your money when you answer this advertisement. If you can find any of the names, write us to-day enclosing stamp for our reply. Do not delay.

$200 IN CASH And Number of Valuable Premiums GIVEN AWAY FREE

Adresses: CANADIAN MEDICINE CO., Dept. 74 Montreal, Que.

supervision of a District Representative and the inspection of the Poultry Superintendent. At the close of the competition each exhibitor must furnish a declaration, signed by his or her parent or guardian, that all ehe conditions, rules and regulations of this contest have been faithfully complied with.

Prizes

First Prize $6.00
Second Prize 4.00
Third Prize 2.00

Application Blank

To J. B. Daggett,
Secretary for Agriculture,
Fredericton, N.B.

I, ...
hereby make application to the Department of Agriculture to become a competitor in the Boys' and Girls' Poultry Club Competition for the County of

..... and I hereby agree to be governed by the Rules and Regulations of said contest to the best of my ability.

Signed .....

Address.....
Approved: (Parent or Guardian)

.....

The St Stephen Poultry Show.

The Twelfth Annual Exhibition of the Charlotte County Poultry and Pet Stock Association held in Agricultural Hall, January 19th-22nd was the first show of the kind ever held in St. Stephen which was open to the whole province. The Association has held an Exhibition every year since its reorganization in 1910 and each year has been a greater success than the previous, until this season, when between two and three hundred birds were entered from outside the county, a number equal to the total entries in former years, while this year's total was between five and six hundred,—or nearly double any previous exhibition. The management regret there is no hall nearer the business centre in which to hold the show as the distance in cold weather affects the attendance. Those who failed to attend this year were the greater losers, as many of the foreign birds were of breeds not usually seen at poultry shows on the St. Croix. Many prizes were carried away by the outside exhibitors in breeds not generally kept by our local poultrymen but in classes where both competed together the local men held their own fairly well. Day Brothers of Moncton made a display of Light and Dark Brahmas, that would be hard to beat and was worth any poultryman's while to spend some time on. George H. Seaman, Moncton, secretary of the New Brunswick Poultry Association, who was a strong winner in R. I. Reds and Hamburgs, was surprised to find his Buff Orpington beaten, as they have been winning wherever shown. Mr. Seaman, while surprised, need not feel disappointed for Buffs, to win over Edd Hacker, of Milltown, must be of the "Madison Square Garden" class.

The secretary, R. W. Whitlock, who has for years been winning with his fine flock of S. C. White Leghorns, had to take second place to J. N. Ferguson, of Fredericton, who virtually swept everything in this class,—the only first falling to Mr. Whitlock being on cockbird, which, however, pleases him better than anything else he might win as the old bird is now well up in years and has never been beaten although shown in the Maritime Province Exhibition at Amherst.

Charles H. Smith, Moncton, made a clean sweep in the Black Langshans.

The S. C. Black Minorcas exhibited by R. B. Stewart, Moncton, were the largest ever shown here.

The judge pronounced C. F. McGarity's entry of White Orpingtons the finest in the Maritime Provinces.

Read Bulletin 223 Issued by Ontario Department of Agriculture

Write TO-DAY for book "Helping Mother Nature"

Farmyard Manure

(Greatest of all Fertilizers)

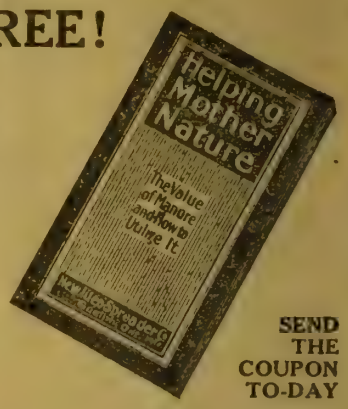
Money-Maker for the Farmer

Sit down and carefully read "Helping Mother Nature." Chapter I. shows how manure assists the land, and its actual fertilizing value in dollars and cents. Chapter II. shows how manure loses its value by leaching and firing. Chapter III. goes on to show how it should be kept till used. Then go on to the next chapter about how to get the fertilizer distributed for dollars and cents profit. Chapter V. suggests how much to use, and why, and where. Chapter VI. shows how corn and similar crops can be fertilized to the greatest advantage—and so on right through the book. It is a book you will have to finish when you pick it up—it is so vitally interesting, and you begin to see where most farmers neglect an easy profit. Spreading the manure has always been an unpleasant and unsatisfactory job.

Must be Spread Fresh—or Great Value is Lost

Your land has never had the value of your farmyard manure, if the latter was dried out, leached, or fired!

This Book will Open Your Eyes! It's FREE!



SEND THE COUPON TO-DAY

NISCO SPREADERS

Have Solved the Problem of Light, Even Distribution with Least Labour.

Instead of dumping stable and stall manure in an unwholesome pile to rot and waste, dump it straight into the low body of the spreader—then when the spreader is full, hitch in the team and—well, read the book. A copy is waiting for you. There is no charge for it. Address—

The NEW IDEA SPREADER CO. Limited

"Spreader Specialists"

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The NEW IDEA SPREADER CO., Ltd.
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Please send me the book, "HELPING MOTHER NATURE." G

Name .....

Address .....

Rev. D. R. Chowen, Milltown, is a new member but has the courage to enter in two of the hardest classes, the Barred Plymouth Rocks and White Orpingtons.

Miss L. C. Brown, a school teacher of St. John, entered a large list of Silver and Golden Campines, but her finest exhibit was in the S. C. R. I. Reds, in which was included a very fine cockerel, scoring 95 points. The exhibition was a comparison show, but this bird, as well as several others, was scored by special request.

E. H. Barter was the largest individual exhibitor, 47 birds, chiefly Barred Plymouth Rocks, with a few White Orpingtons. John P. Bain, of Hillside Poultry Yards, St. John, was a close second, with 45 birds, but a greater variety, including many of the game breeds. Scott & Warren, St. John, also made a large entry of many varieties not usually seen at our shows, including a number of games and bantams. C. R. Fitzsimmons, McAdam, made a very pretty display of White Bearded Polish Bantams.

J. W. Hulme, Milltown, was also a large exhibitor, including about every variety in the Standard from every class, section and country.

In the entry made by R. Stevenson of Milltown, were some high-class White Rocks. There is no disputing the fact, Bobbie not only brings good stock but he knows how to make a white bird white.

Edmund Carter had a few young birds from Barred Rock stock, procured from Dannie Pike and if his interest continues as in his first exhibit, he will make both Dannie and Mr. Baxter look to their laurels another year.

E. Klein, Milltown, was the largest exhibitor of Columbia Plymouth Rocks, the most recent variety added to the Government Prize List, and Helen Tourtillott introduced a still newer variety, the Pencilled Plymouth Rock.

J. T. McClure, Jack Dinsmore and Sedgefield Curran were the chief competitors in the White Wyandotte class, with the honors slightly in favor of McClure. John W. and Edgar Bailey displayed their usual assortment of Blue Andelusians and Black Leghorns.

The strongest competition in any class was in the R. I. Reds, in which were many entries from outside. However, both the president, F. M. McCready and H. D. Dinsmore, were able to capture some firsts and Dinsmore won handily in the "Ancona" class.

A number of young exhibitors entered in Classes they did not thoroughly understand and the Judge very thoughtfully took them in hand, showing them the different types and markings of the birds, explaining how and where to botain the proper birds fit for exhibition and, no doubht, they will all appear next year among the winners in thier classes.

Ralph McCready was the only local entry in the Utility Class which is a new feature in this section.

A number of birds were sold at the close of the exhibition. Donald Hawthorne purchased a trio of the prize-winning White Rocks and will exhibit in that class in future.

Darius Hyslop and Alvin Johnston of Moore's Mills, and A. D. Stevenson entered Toulouse, African and White Embden geese. A few ducks but no turkeys were entered.

The Leghorns had the largest entry of any breed, but the Barred P. Rocks out-numbered any one variety, while the S. C. R. I. Reds had the greatest number of entries in each of the four sections of their classes.

In the following list of pirze winners, the abbreviations are: C, for Cock; H. for Hen; R. for Young Rooster or Cockerel; P. for Pullet. The residence will be given the first time winner's name appears.

Barred Plymouth Rock, E. H. Barter, St. Stephen, 1st and second C; 1st and 2nd H.; 1st and 2nd R.; 1st and 2nd P.; first exhibition breeding pen; 2nd and 3rd cockerel mating pen; 1st and 2nd pullet mating pen. Hazen Linton, St. Stephen, 3rd R.; Wm. Finkle, St. Stephen, 4th R.; E. Carter, St. Shephen, 3rd and 4th P.; Rev. D. R. Chowen, Milltown, 5th R., 5th P.; H. B. Pike, 1st cockerel mating pen.

White Plymouth Rock—R. W. Whitlock, St. Stephen, 1st and 2nd C, 2nd and 3rd H., 3rd R; Robert Stevenson, Milltown, 1st H, 1st R, 1st and 2nd P.; Charles Irvine, Milltown, 2nd R, 3rd P.

Buff Plymouth Rock—Scott & Warren, St. John, 1st C.; 1st H.

Columbia Plymouth Rock—E. Klein Milltown, 1st H., 1st R., 1st P., 1st breeding pen.

Pencilled Plymouth Rocks—Helen Tourtilliott, 1st H.

White Wyandotte—J. T. McClure, St. Stephen, 1st and 3rd R., 1st and 3rd P.; Jack Dinsmore, 2nd R., 2nd P.; Sedgefield Curran, 4th R.

Silver Laced Wyandotte—E. Klein, 1st C., 2nd H., 2nd R., 2nd P.; J. M. Hulme, Milltown, 1st H., 4th P., 1st breeding pen; Harry Hulme, 3rd H., 3rd R.; John P. Bain, St. John, 1st R., 1st P.; Wm. Hulme, 3rd P.

Golden Laced Wyandotte—John P. Bain, 1st R., 1st P.

Columbia Wyandotte—E. Klein, 1st C., 1st H., 1st P; Edd Hacker, Milltown, 2nd H., 2nd P.

Black Wyandotte—John P. Bain, 1st H., 1st R., 1st P.; Wm. Hulme, 2nd H.

Single Comb R. I. Red—Miss L. C. Brown, St. John, 2nd H., 1st R., 1st and 4th P.; F. M. McCready, St. Stephen, 1st and 3rd H., 3rd R., 5th P., 2nd breeding pen; H. D. Dinsmore, St. Stephen, 4th H., 1st breeding pen; Alvin Johnston, Moore's Mills, 2nd R., 2nd P.; A. C. Stevenson, St. Stephen, 4th R., 3rd P.; C. F. McGarity, 5th P.

Rose Comb R. I. Red—George H. Seaman, Moncton, 1st and 2nd C.; 1st and 3rd H., 1st R., 1st P.; F. M. McCready, 2nd H., 2nd R., 2nd and 3rd P., 1st breeding pen.

Buff Orpingtons—Edd Hacker, 1st C., 1st H., 1st R., 1st and 4th P., 1st breeding pen; George H. Seaman, 2nd C., 2nd H., 2nd R.; R. Stevenson, 3rd C., 3rd P., E. Klein, 3rd R.; Efford Hacker, Milltown, 4th R.

Black Orpington—Scott & Warren, St. John, 1st C., 1st H.

White Orpington—C. F. McGarity, Milltown, 1st C., 1st and 2nd H., 1st and 2nd R., 1st and 3rd P., 1st breeding pen; A. C. Stevenson, 3rd and 4th H.; E. H. Barter, 3rd R., 4th P., 2nd Breeding Pen; H. D. Dinsmore, 5th P.

Silver Grey Dorking—Day Bros., Moncton, 1st C., 2nd H.; Scott & Warren, 2nd C., 1st H., 1st R., 2nd P.; John P. Bain, 3rd C., 3rd H., 2nd R., 1st P.

Red Caps—John P. Bain, 1st C., 1st H.

Light Brahma—Day Bros., 1st and 2nd C., 1st and 2nd H., 1st and 3rd R., 2nd and 3rd P.; J. W. Hulme, 3rd C., 4th H., 4th P.; Chas. H. Smythe, Moncton, 3rd C., 2nd R., 1st P.

Dark Brahma—Day Bros., 1st C., 1st H., 1st R., 1st P.

Buff Cochin—J. W. Hulme, 1st C., 1st H., 2nd P.; Harry Hulme, 2nd H, 3rd P.; John P. Bain, 1st R., 1st P.; H. B. Pike, 2nd R.; Jack Pike, 3rd R.

Partridge Cochin—Day Bros., 1st and 2nd C., 1st and 2nd H., 1st and 2nd R., 1st and 2nd P.; Scott & Warren, 3rd H.; J. W. Hulme, 4th H.

Black Langshan—Chas. H. Smyth, 1st and 2nd C., 1st and 2nd H., 1st and 2nd R., 1st and 2nd P.; A. Johnston, 3rd C., 3rd H.

Single Comb Brown Leghorn—Scott & Warren, 1st C., 1st H., 1st R., 1st P., Alvin Johnston, 2nd R., 3rd P., 1st breeding pen; Harry Hulme, 2nd P.

R. C. Brown Leghorn—Scott & Warren, 1st C., 1st H., 1st R., 1st P.; J. W. Hulme, 2nd H.; Harry Hulme, 3rd H., 2nd R., 3rd P.; Wm. Hulme, 3rd R., 2nd P.

Single Comb White Leghorn—R. W. Whitlock, 1st and 3rd C., 3rd H., 2nd R., 4th P., 2nd breeding pen; J. N. Ferguson, Fredericton, 2nd C., 1st, 2nd and 4th H., 1st and 4th R., 1st, 2nd and 3rd P., 1st breeding pen; R. Stevenson, 3rd R., H. D. Dinsmore, 5th P.

Rose Comb White Leghorn—Day Bros., 1st C., 1st H.; Scott & Warren, 1st R., 1st P.

Single Comb Buff Leghorn—John P. Bain, 1st C., 1st H., 2nd R., 2nd P.; Day Bros. 2nd C., 2nd H., 1st R., 1st P.; Harry Hulme, 3rd R., 3rd P., 1st breeding pen.

Black Leghorn—Edgar T. Bailey, 1st H., J. W. Bailey, 2nd R., 1st P., 1st breeding pen.

Rose Camb Black Minorca—John P. Bain, 1st C., 1st H., 1st R., 1st P.

Single Comb Black Minorca—R. B. Stewart, Moncton, 1st C., 1st, 2nd and 3rd H., 1st and 2nd R., 1st and 2nd P.; Harry Hulme, 3rd R.; J. W. Hulme, 3rd P.

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But when you see that the top bears the "REGAL" label, you are sure you are getting good flour, which carries a money-back-guarantee of satisfaction that insures you against baking failures.

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MONTREAL

Black Spanish—R. Stevenson, 1st H., 1st R.; John P. Bain, 2nd H., 2nd R., 2nd P.; C. F. McGarity, 1st P.

Blue Andelusians—Scott & Warren, 1st C., 1st H.; E. T. Bailey, 2nd H., 2nd P.; John W. Bailey, 1st P.

Anconas—John P. Bain, 1st C., 1st H., 3rd R., 3rd P.; A. Johnston, 2nd H., 2nd R., H. D. Dinsmore, 1st R., and and 2nd P.

Houdans—Day Bros., 1st C., 1st H., 1st R., 1st P.; Wm. Hulme, 2nd C., 2nd H.; George H. Seamans, 3rd H., 2nd R., 2nd P.

Silver Spangled Hamburg—Geo. H. Seaman, 3rd C., 2nd and 3rd H., 1st and 2nd P.; Scott & Warren, 2nd C., 1st H.

Golden Campine—L. C. Brown, 1st C., 1st H., 1st R., 1st P.; Geo. H. Seaman, 2nd and 3rd R.

Black Breasted Red Game.—Scott & Warren, 1st and 2nd H., 1st and 2nd P.; Geo. H. Seaman, 1st R., 3rd P.

Dark Cornish Game—John P. Bain, 1st C., 1st and 2nd H., 1st R., 1st P.; C. F. McGarity, 2nd and 3rd P.

White Indian Game—John P. Bain, 1st and 2nd H., 1st R.

Pyle Game—Scott & Warren, 1st P.

Silver Duckwing Game—John P. Bain, 1st H., 1st R.

Sicilian Buttercups—Alvin Johnston, 1st H., 1st breeding pen.

Utility Pairs, R. C. R. I. Red Pullets—Ralph McCready, 1st.

Utility Breeding Pen, S. C. R. I. Reds—L. C. Brown, 1st.

Black-Breasted Red Game Bantam.—Scott & Warren, 1st C., 1st Hen, 1st R., 1st P.

Pyle Game Bantam—Scott & Warren, 1st C.; 1st R., 1st P.

Black Cochin Bantam—Chas. H. Smythe, 1st C., 1st H., 1st R., 1st P.

White Bearded Polish Bantam—C. R. Fitzsimmons, McAdam, 1st R., 1st and 2nd P.

Toulouse Geese Pair—A. C. Stevenson, 1st old, 1st young.

African Gray, pair—Darius Hyslop, Moore's Mills), 1st old, 1st young.

Indian Runner Ducks, pair—Harry Hulme, 1st.

Sharp-pointed Eggs no Relation to Sex.

Certain things affect the sex of chicks, but the shape of the eggs does not indicate the nature of its contents in this respect. The age and condition of the hen causes variation of shape of eggs without regard to the potential chicks' sex. The writer has repeatedly set two machines, one with the eggs which are most pointed, the other with eggs which are well rounded, and never yet had results which would bear out any of the superstitions as to judging sex by shape of egg. A pullet's eggs are smaller and more pointed than those of old hens, and certain abnormal conditions of the oviduct will also affect shape of eggs.

A vigorous young male penned with few old hens will result in more males than females among the offspring. If pullets or young hens are bred to an old cock more females than males will be hatched. Late in the season, when the young male has lost some of his vigor, the result will be a preponderance of female chicks if he does not limit his attentions to favorites. The percentage of fertility will be greater early in the season if a cockerel is bred to two-year-old hens; but unless his harem is rather large, the percentage of males in the resultant offspring will be unduly heavy. So the size of the breeding pen should be decided by the vigor of the male and the season of the year. If the cockerel has never been permitted to run with the females, give him more females in the breeding pen than if he has constantly been with the flock, to safeguard against the preponderance of cockerels among the chicks.—H. A. B.

Children are little sensitive mirrors of surrounding thoughts and conditions.

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In his sixth order to us, Mr. J. C. Harris of Ingersoll, Ont., says more for the Spramotor than our most enthusiastic advertisement. A man may buy a thing once and be dissatisfied, but when he comes back for additional purchases, there is only one conclusion that we can come to, and that is that articles must be all right. We never claimed more for the

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than that it would do the work required of it effectively and economically and in all things give satisfaction. And letters which we have received and are constantly receiving from farmers all over Canada, signify that our statements have been met with a service that is making staunch friends for the Spramotor wherever it is used. Over 100 Gold Medals and Special Awards to the credit of the Spramotor shows that these expressions of confidence are merited. Suppose you write now while the matter is fresh in your mind for a copy of our booklet on crop diseases.

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TRY .AN .AD. .IN .THE .MARITIME .FARMER—IT .PAYS

Nova Scotia Institutes.

(Continued from Page 279).

lecture was enjoyed immensely by the large audience of women and men and his optimistic outlook on the close of the war, came as a ray of light amidst the gloom of these dark days. Principal Cumming of the College, gave a short but eloquent address, complimenting the Institutes on the splendid work achieved during their short life and encouraging them for the future. A resolution of thanks was passed to the speakers of the first meeting, to Mrs. Sexton, Rev. Mr. Wilson, the Executive of the Local Council of Women, the Town Council of Truro, and all those who had contributed in any way to the success of the Convention, moved by Mrs. Polley of Lunenburg, and seconded by Mrs. Davis of East Leicester and passed unanimously, all the delegates rising to signify their individual enjoyment of the three days in Truro. With the singing of "God Save the King," the third Convention was brought to a close and the feeling was that the meetings had given a great impetus to the future life of the Institutes of Nova Scotia.

The report read by the Superintendent of Institutes for Nova Scotia, Miss Jennie A. Fraser, was as follows:

Madame Chairman and Delegates:

In welcoming you for the third time to these grounds, I feel that these conventions have marked the milestones of an eventful three years. In welcoming you to this building for the first time I feel that an eventful future lies before us. Let us look back for a little time and view the road over which we have travelled and then let me look forward and see what the future may hold for us.

Just two and a half years ago I sat in a hall in the county of Pictou listening to a warm-hearted, enthusiastic woman place before her audience the work that had been accomplished in another province through the efforts of the Women's Institutes, and I wondered in a vague sort of way if the women of Nova Scotia would feel the appeal of a society established along the broad and practical lines of the Women's Institutes. That evening saw the first Institute organized in Nova Scotia, and while we have gained and lost since that evening, our gains now far exceed our losses and the organization has made such a very special appeal to the minds and the hearts of the women of our province that they, individually and collectively, have built up in these two and a half years, an organization that stands for much in the life of Nova Scotia and is, I am not afraid to state, its most representative society.

You know pretty well the story of Women's Institutes in Nova Scotia. Eight Institutes organized in July of 1913 in Pictou, Colchester and Cumberland Counties; six more added in September of the same year in Hants, Kings and Annapolis; the Convention held in January of 1914 which gave confidence and inspiration to the fourteen; another Institute added to the number in January, 1914—the first in Lunenburg Co.—and in the summer of 1914 after a vigorous campaign, the list of Institutes was swelled to thirty-six, the new counties coming in being Yarmouth, Antigonish, Guysboro and Queens and several new Institutes organized in Kings, Annapolis and Lunenburg.

In August of 1914 the terrible war-cloud broke in Europe and we were face to face with the most tremendous issue that the world has ever known. The appeal went out for Red Cross funds, Red Cross supplies, Patriotic funds and before us was placed the suffering and dire need of that most gallant little country, Belgium, and we, with the other women of Canada, put our hand to the plow and we have neither faltered nor turned back although the furrow has been a long and weary one and at times, almost unendurable. But we were ready for the call and this is just another instance of a fact that is becoming more recognized every day—that organization can achieve and carry on work so much more sucecssfully, expeditiously and thoroughly than any haphazard attempts.

In January, 1915, we held the second Convention and if there were any doubts in the minds of the members of the worth and usefulness of the Institutes, they must have been eliminated, after listening to the Reports read by the delegates, of the work accomplished by their societies. During last summer fifteen Institutes were added to the list, seven dropped out, leaving the list standing at forty-four, distributed as regards counties as follows:

Pictou, 2; Colchester, 1; Cumberland, 3; Hants, 3; Kings, 5; Annapolis, 2; Digby, 4; Yarmouth, 4; Lunenburg, 7; Queens, 3; Halifax, 1; Guysboro, 4; Antigonish, 1; Cape Breton Island, 4. Our membership stands at 1383 with Weymouth, the banner Institute, boasting a membership of 81, Port Williams next with 69, D'Escousse next with 51 and Tatamagouche running very close with 50.

Those Institutes that found the burden of existence too heavy may be resuscitated in the course of the years. We cannot look for continued and uninterrupted success—if we maintain and hold a steady and strong growth we can be satisfied, and as the Institutes grow stronger and get more in touch with one another we will be better able to help the weaker Institutes and lend them a hand. In the meantime we can cheer ourselves with this remark "Even failure is only a relative term, you know. And that which the world calls failure may have some beter name in another planet."

When I make the statement that fifteen Institutes were organized during the past summer, I don't want you to think that only fifteen meetings were held and that we just went out and organized those fifteen Institutes. Alas! things are not achieved in such an easy fashion. Personally I held fifty-two meetings from the first of June to the end of November; nineteen were visits paid to organized Institutes and twenty-seven were organization meetings held with the assistance of Miss Dutcher—this number of meetings was lower than usual owing to the impossibility of my leaving home until June. Then Miss McQuire held fifteen meetings for organization purposes, so you see, we do a great deal of fishing for a very few bites, but we are so pleased when we land a lusty trout in the shape of a new Institute that it rewards us for days and days of disappointing effort. It pays even for an empty hall or schoolhouse as a reception to two shrinking females, and it even pays for several unenthusiastic audiences, a contingency, let me assure you, that is much harder to endure successfully than an empty hall. Several of the Institutes organized during the summer are doing Red Cross work for the first time in their community, not having realized its extreme importance before, and we feel that we have achieved good work for the country, that requires so much of that sort of effort now.

In 1914 we were fortunate enough to secure Miss Marion Cox, of the Normal School to give cooking demonstrations to the Institutes in Hants, Kings, Anapolis, Yarmouth, Lunenburg and Queens Counties, which were evidently much appreciated. The past summer we were also fortunate enough to be able to procure Miss Annie Redmond of Dartmouth, to give demonstrations in Guysboro, Antigonish, Colchester and Cumberland counties. Miss Cox and Miss Dutcher gave demonstrations in Pictou County and the latter gave one in Bridegwater. It was endeavored to have these demonstrations as practical and useful as possible in the limited time. We hope they met with the aproval of the Institutes and that they were found to be a help, as we plan to arrange a series on a much more elaborate scale for the summer months.

We utilized the generous Travelling Library scheme of McGill University in order to help the Institutes procure books, and seventeen Institutes availed themselves of the opportunity and found the books of the greatest help. This offer stands during this year for any Institute, new or old, that cares to send in an application.

During the Autumn I had the pleasure of judging at nine exhibitions and we procured Miss Redmond for two. I would like to appeal to the Institutes for a more enthusiastic interest in the County Exhibitions. The Institutes of North Queens have done much toward the improvement not only of the Annual Exhibitions of North Queens but also of the Exhibition building. Many of the Domestic Departments in the Exhibition lists now in use by the County Exhibitions are sadly in need of additions and substractions, and I owe a debt of gratitude to the Exhibition Commissioners for the kindly manner in which they have met any suggestions and the prompt way in which they have utilized them, but I feel that the lists still leave something to be desired and that not only the lists but the judging requires standardizing.

I feel that you as representatives of your Institutes require the highest praise for the work you have achieved since the first inception of Institutes in Nova Scotia. If it is not for anything else but the Red Cross work the greatest credit is due you. I wonder if you realize just how much money you have paid out of your Institutes for Red Cross, Patriotic, British Red Cross and Belgian Relief since the war began? To the first three you have given the altogether splendid sum of $7970.32; for Belgian Relief, $692.67; and you have forwarded, as nearly as I can figure it out, 162 large boxes. Then you presented the Provincial Red Cross Society with a motor ambulance, procured from the McLaughlin-Buick Company at a cost of $1,540.00. We are indebted to this firm for a splendid photograph of the ambulance and a silver plate affixed to the side bearing the inscription 'Presented by the Women's Institutes of Nova Scotia." Several of our larger Institutes, to avoid confliction, do Red Cross work in conjunction with or through another society, so you will not wonder that I say you are deserving of the highest commendation. The largest amount raised by a single Institute for these various causes was achieved by Canning, which stands at the head of the list with $1001.00; Port Williams comes next with $690.00 and Sherbrooke, Guysboro Co., comes in a good third with $588.24. Lakeville, Kings Co., leads in Belgian Relief with $229.90, and Aspen, Guysboro Co., next with $132.00. The hard part of this giving is that it must be done over and over again for Red Cross and Patriotic, for Field Comforts and other causes are making their appeal. We cannot shut our eyes to the terrible conditions holding among the Serbs and Montenegrins. They are our allies and their intense and cruel suffering cry to us for aid. We cannot rest feeling that we have done what we could, —we will not have finished when we feel we have done what we could not possibly do—then only will we commence to feel the stress of this war in any degree that may slightly be compared to the conditions that exist in the countries that have borne the brunt of the fighting. It is not a pleasant thing to contemplate—the length of the war, nor how the issue may leave us but the main thing at its close is to feel that we have done what we could—to know the cause is a just and a right one and to realize that "The strength of all the hosts of heaven is with him who is faithful to the right."

Besides Red Cross or war work I know that you have not let the home or local interests suffer. The causes that called before the war are still with us and must not be neglected and have not been. The improvements introduced into your schools, the assistance you have rendered to promote improvements in your community and your willingness to stand by and lend a hand have all been thorougly appreciated and everywhere I go I hear good words for the achievements of the Women's Institutes. You have kept up your meetings well and faithfully; have settled your own difficulties, only a very few have crept in, that is, to my knowledge, and those few you have overcome with very little difficulty. Don't let us ever lose sight of the big things of life in little bickerings and misunderstandings that will be forgotten so easily that a year's distance will hardly bring a remembrance. Differences are bound to creep in, but let us endeavor to settle them with open

(Continued on Page 298).

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REFUSE SUBSTITUTES.
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New C. G. R. Time Folder.

The last issue of the Canadian Government Railways time folder appears in a new dress, and an attractive one at that.

On the front cover the words "Canadaian Government Railways" are shown in prominent and distinctive lettering with pronounced initials. A centre design shows a combination of the coat-of-arms of the various provinces, followed by the names of the Intercolonial Ry., Transcontinental Ry., Prince Edward I. Ry., now merged into Canadian Government Railways.

The back cover has a repetition of the name of the railways, the centre design being a striking monogrammic arrangement of the initial letters C. G. R. followed by the principal terminal points, Halifax, Sydney, St. John, Charlottetown, Quebec, Montreal, Cochrane, Winnipeg.

A striking red has been used for the cover, headings and rules, the text being printed in black.

Included in the time folder is a map showing the railways now under Government operation.

Gazette.

PAINS AFTER EATING

WIND IN THE STOMACH—ACIDITY, HEADACHES—CONSTIPATION

ARE SIGNS OF INDIGESTION.

Indigestion—the complete or partial failure of the digestive processes—frequently throws out of gear the whole machinery of the body. You can't enjoy the vigour and vitality of good health unless your stomach, liver and bowels do their work regularly and efficiently.

MOTHER SEIGEL'S SYRUP

As a digestive tonic and stomachic remedy, Mother Seigel's Syrup is esteemed in tens of thousands of homes, wherever the English language is spoken. If you suffer much or little from disorders of the stomach, liver or bowels, try the effect of taking 15 to 30 drops of this famous remedy in water, after meals, for a few days and note its beneficial effects.

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"IN TIMES OF WAR PREPARE FOR PEACE"

Plant fruit trees now, so as to reap the harvest when peace is restored. We can supply choice Apple trees, Ornamental trees and Shrubs, Raspberry, Gooseberry, Currant and Strawberry plants of our own growing at lowest prices. Bees and Beekeepers Supplies. Satisfaction guaranteed. Write for prices.

E. L. COLPITTS,
PETITCODIAC, - N. B.

Why we Should Prune and the Different Treatment of Old and Young Trees.

(Continued from Last Issue.)

As it is our idea the first few years of a tree's growth to prune for wood, you can readily understand the importance of this first cutting back. To enable us to form a good strong, well-balanced head we must have abundant wood growth and pruning during the first four or five years should be directed towards that end. After that age it will be shown later that our pruning practices are radically changed.

In heading back, head back the strongest branches the most and the weakest the least, in order to give a correct balance to the tree. This may be contrary to the popular opinion, but that is because popular opinion has confused the results of heading back a tree as a whole with the results from heading back separate branches.

This will probably be about all the pruning required the first year, although the tree should be looked at during the latter part of June and if any branch is growing at the expense of the rest it should be nipped back, bearing in mind the one aim to get a stocky and well-balanced growth to select from.

The first real pruning to our newly planted orchard comes in the second spring.

As the tree is to be the modified leader type, it is pruned so that the central branch will maintain the lead, and five other branches at most, will be selected, as previously stated. All other branches are removed and the five selected branches are cut back a considerable distance, cutting the weaker ones the least. As these main branches will probably have some laterals on them, it is advisable to remove these at this time. Now this second year much can generally be gained by adopting a system of summer pruning and continuing both summer and spring pruning for a number of years. By spreading the pruning over two periods like this, the shock to the tree is at on time excessively great, so that it is easy to maintain a correct balance. Furthermore, a whole season can be gained by summer pruning. Early in summer the branches cut back in the spring will have put forward considerable growth. Now as soon as this growth has reached a stage where laterals can be spaced on it, pinch back the branches and you will thus gain a season. It is the common practice to let these terminal growths grow until the following spring when it is found necessary to remove say a foot or more of new wood. This means a waste of energy, for you could have cut back to that same point in summer and would probably only have had to cut off six inches or so of new wood. The idea is to economize in the energy of the tree and relegate as little of it as possible to the brush pile, thus conserving it for use by the tree itself and incidentally gaining a season in your pruning. By the following spring each of the branches pinched back in summer will probably have a number of laterals attached to them. All these laterals but one for each main branch are removed, thus leaving twice as many branches as there were the previous spring. Select, of course, the best spaced and strongest branches in every case.

In selecting these laterals make sure that the lateral is not cut the same length as the main branch, or the result will be weakened crotches.

We now arrive at the summer of the third year after planting and as the trees are well established and in good condition, a considerable amount of new wood should be put forth. This new growth is again cut back, the same as the previous year and new laterals thus forced out. In this way another season is gained by summer pruning practices and we arrive at the fourth spring after planting with a strong stocky tree containing well spaced and well balanced lateral branches. This spring it will only be sirable and cross branches from the necessary to clip back too long or rangy laterals and thin out the undesirable and cross branches from the trees. During the summer little pruning should be done, but attention must be paid to too strong growing branches and laterals, suppressing the strong to give the weaker an opportunity to develop. This practice of milder cutting back and thinning out both spring and summer is followed until the tree reaches the age where it should come into bearing. This age varies of course with the variety and the locality. Our idea up to the present has been to prune for wood growth, now our procedure changes and we prune for fruit. The mistake is often made by growers of continuing the same practices during the bearing age as they did during the frame pruning period, thinking that the methods which have given them such fine and shapely trees should certainly give them fruit, but such is not the case.

Of course a variety like Duchess or Wagener can stand more cutting back at this stage than a variety like Gravenstein or King, the former being weak growers, tending to heavy and early fruiting and the latter being vig-

OLD-AGE COUGH & WHEEZING

There is real relief for the Bronchial troubles of old folks in Veno's Lightning Cough Cure. Quickly it frees the choked-up tubes and air passages, loosens the tough phlegm, and soothes the trying cough. Old age need never be burdened with old coughs, old wheezings, asthma or catarrhal troubles while Veno's Lightning Cough Cure can be purchased at the stores.

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There is no opium, morphine, or paregoric in Veno's Lightning Cough Cure, nothing harmful to old or young. Its wonderful curative power is the natural result of its strengthening action on the breathing organs. Each ingredient it contains has definite action on the mucous surfaces of the throat, lungs, and bronchial tubes, and all combine to enhance the effect. That is why Veno's cures where others fail. That is why it has the largest sale in the world. Take it for—

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Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

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orous growers tending more to wood production. Generally speaking, however, the spring pruning should merely consist of removing cross branches, needless branches and cutting back long barren growths, where laterals are needed, but no regular system of unrestricted heading back should be adopted. This should be supplemented by summer pruning to induce fruitfulness, especially in the varieties which are shy bearers and which take a long time to come into bearing.

Summer pruning for fruit is done at a different period from summer pruning for wood. Pruning to induce fruitfulness is done when the terminal buds are forming on the upright stage will be followed by very little after-growth. In fact if there is much after-growth it is a sign that the pruning has been done too early. This aftergrowth of course may be weak and winter kill, but that matters little for it will not materially affect the balance of the three as a whole. If done at the proper time, however, there will be very little after-growth to winter kill. Pruning at this season of the year, just as the tree is completing its season's growth will cause a thickening of the tissues, and will in this manner very often give rise to fruiting wood, either the following year or the year after, and in cases of bearing trees the remaining fruit buds will be strengthened by such treatment. The amount of wood to remove at this time will entirely depend on the vigor of the branch and may vary from a couple of inches to a foot or a foot and a half in cases of extreme vigor and tendency to wood production.

After a tree has been successfully brought into full bearing the pruning should be annual, not spasmodic. Pruning at long or irregular intervals is bound to upset a tree, whereas annual pruning will keep the tree in proper balance, for the amount of wood removed will be very small. The only pruning necessary in such cases will be to cut out bad limbs, crossing limbs and now and then do a little thinning.

Sumarizing our remarks so far then we find that during the first five or six years of the trees life we prune for wood, to get a good strong frame and a desirable form for the tree. During the next few years we prune to induce fruitfulness, changing our tactics and object entirely. During the balance of the tree's life we prune to maintain a proper balance in the tree and thus maintain its profitable fruitfulness. Our sole object in pruning therefore is to produce better fruit than we could produce without pruning practices.

This brings us to a discussion of how best to remedy some of the undesirable conditions existing among the older orchards. In the first place the trees are planted too thickly and it will positively be necessary in a great many cases to take out every other diagonal row to permit the trees to spread out and present their fruit bearing area to the sun. You cannot expect to grow good fruit in a forest. It is not sanitary and all the efforts in spraying are put at naught by those close orchards. Not only are the orchards too close, but by being so close planted the trees have been forced to go skywards until there is practically no fruit borne on the lower parts at all, the lower portion of the tree merely being used to support a few long branches of fruit at the top. It is impossible to spray such trees. You cannot reach them, in fact in many cases you cannot poke a spray rod up through the canopy of trees.

To remove every other row then is the first step. If the owner does not care to do this at once, a plan of the orchard should be made and the condition of each tree marked on the plan. In this way the best trees can be selected and a plan of removal adopted whereby the largest number of good trees are left. The condemned trees may then be severely headed back to give the permanent trees more room, and in about two years the condemned trees, now reduced almost to barren poles, can be removed. An additional crop of apples may thus be removed from these condemned trees while the others are filling in their increased area.

The result of this close planting will be what are termed long, barren arm trees. That is trees with long, barren arms supporting a little brush at the top.

These trees need to have the tops cut back to induce lateral growth to start on the barren arms.

Such severe heading back will induce much new growth, in fact it will cause a rejuvenation of the tree and although the new growth may appear excessive, it can, if properly selected and thinned out, be made to completely transform the tree.

Sucker growth or water-sprouts will be abundant in many cases and should not be despised, for by selection and heading back these can soon be made into bearing wood.

Of course with such varieties as Baldwin, headed back severely during the year when it is not fruiting, this growth may be very abundant, thus necessitating a very severe thinning out.

In contradistinction to the barren armed tree we have the very thick, but high, neglected tree. This tree will need to be thinned out first, then headed back and kept thinned out by summer pruning, which will lessen its tendency to reproduce the wood removed.

It is easy to tell a tree which besides needing to be lowered so that it can be sprayed and worked with properly, needs also rejuvenation. The annual new growth on such a tree will not exceed an inch or two. It does not make enough annual growth to keep a good continuation of fruit buds on the go.

In the case of very high trees where considerable heading back is necessary, it will porbably be better to do it by installments, and in many cases it will be advisable to leave the bottom branches intact and thus reduce the shock.

In making such large cuts as these dehorning practices will require, attention must be paid to a few points. In removing large limbs make the first cut at a point several inches from where the final cut is to be made and on the under side. Carry this cut about half way through, then cut through to meet it from the upper side, starting the upper cut about two inches farther out. Afterwards remove the stub supporting it while cutting, so that no bark splitting will result. Cut back to a good lateral branch and make the cut close to that branch. All wounds of any size should afterwards be made pointed at both ends.

Wounds over two inches in diameter should be treated at once with some coating to keep out disease and the weather. A good application of paint is satisfactory for small wounds, but will not suffice for larger ones; shellac is better for these. Many growers use coal tar, although it is claimed that it causes some slight injury to the cambium. The users of it, however, claim that this injury is not serious enough to consider and that it is the best and cheapest covering for large wounds. Large wounds should receive constant attention until healed over, and if this is given no evil result will follow from such dehorning practices.

Address by M. B. Davis, assistant hortilculturist, Ottawa, before the Nova Scotia Fruit Growers at Wolftville, January, 1916.

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You will receive the benefits of this service when you buy from a dealer in Nova Scotia Carriages.

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500 Sheets for 95 cents, Postage Paid.

The Maritime Farmer

SUSSEX, N. B.

Education For Country Life.

(Continued from Page 277).

the Teuton menace as we call it, our country gives our soldier boys a year or so of the intensest sort of training at great cost. For the farmer's fight there is need too of special training.

As a raiser of animals, he feeds and breeds, uses them in his work, watches and tends, protects and nurses, selects and rejects, buys and sells. As with plant life, so with animal life there are a multiplicity of forms and cares. He has horses, sheep, cattle, swine and poultry. They require attention and care not in groups but as individuals. While they constitute the machinery for turning his crops into merchantable forms they are not inanimate things. They are living partners wtih him in his business. There are personal relations with them. They work for him and he works for them. They have enemies and diseases and he must defend and minister unto them. They have their appetites and special requirements of food, he must satisfy these. If skill and vigilance an dendurance are needed in the production of good crops, intelligence and love are needed in the farmer's work of raising animals.

From the accounts given of his work as a laborer and agriculturist, it may readily be seen in the third place that he must combine in a remarkable degree the functions of a Mechanic and Scientist. The work of the farm becomes more and more the work of a skilled mechanic. The farmer must be very largely his own carpenter and builder, mason and cement worker, blacksmith and tinsmith and plumber, painter and glazier. He should be an all round expert equipped to perform the commoner tasks pertaining to a dozen different trades.

On that side of his work in which science plays a part, there are manifold requirements also. For the best kind of intelligent work—and there should be nothing but this kind of work on the farm—he requires at least elementary knowledge of the sciences of botany, zoology, physiology, physics, chemistry and meteorology; not in the manner that the secondary schools of the country teach them at the present time, but in their intimate application to weeds and weed seeds, insects and plant diseases, domesticated animals, soils, drains, fertilizers and manures, rainfall and frost, fruit growing and grain growing, the laws of breeding and the principles of feeding. Farming is an art, agriculture is a rare complication of sciences. For these there must be found teachers.

In the fourth place, the farmer is a business man. He is more too than the owner of a small business; he is the manager of a big business. He employs labor and he uses capital. He buys and sells, he bargains and trades, he borrows and loans, he mortgages, he banks, he transmits money, he forms joint stock companies, or co-operative associations. He has the most intricate business in the world. No expert has ever yet worked out a satisfactory system of book-keeping for him. It is easy enough to keep track of the business of a bank or a railroad or a grocery store, but how is one to keep accounts for the soil, for manures, for feeds and for the intricate labor of the farm? And yet he is told he should keep books!

In the fifth place, he functions as a citizen. And a most important part of the citizenship he is. From the country come the builders of our cities, the founders of industries, the leaders in professional callings. A sound rural citizenship is the first requirement of stable governments and democracies. Potriotism is nurtured in the soil. Indirectly our leadership has its source there.

And as a citizen of the highest type he must be intelligently zealous for the four institutions that secure for the state its well-being, viz.: the Home, the School, the Church, the Government. To these he has exacting obligations. He will express his highest sense of citizenship as he stands for good homes, for the best educational oportunities, for morality and for clean and unselfish politics.

Thus we see the six-fold nature of the farmer's requirements in education, viz.:

Laborer, Agriculturist, Mechanic, Scientist, Business Man and Citizen. And what has been said about the man of the farm might be detailed in many similar respects for the farm woman.

(Continued Next Issue.)

Record Prices for Grade Holsteins.

At the dispersion sale of the show herd of the Carnation Stock Farms at the close of the San Francisco Exposition, December 1st and 2nd, grade Holstein cows brought probably the most remarkable prices ever recorded at any grade sale in the United States. One grade Holstein cow, Carnation Queen, was picked out by Auctioneer Gue, of Washington, to be the finest individual Holstein cow in the herd, and at the close of the first day he gave a lecture illustrating the qualities to be sought, by using Carnation Queen as the ideal Holstein cow. She was placed on sale the next morning, and there was spirited bidding among five different parties for this cow. She was finally knocked down to a millionaire living south of San Francisco for $505, which makes her the highest priced Holstein grade ever sold at public auction.

Another Holstein grade was sold at $300 and many brought over $200 each. We understand that the entire herd of grade cows averaged the Carnation Stock Farms $250 apiece, but they were a selected lot of several of the leading grade herds in the state.

In speaking of this, Mr. Harold McAlister says: "We happened to see several of the grades last summer that were milking over 80 pounds per day, or about five gallons (wine measure) to the milking.

When Holstein grades can command such prices and give such enormous quantities of milk, it is a great encouragement to farmers with grade herds, as to what can be accomplished by the use of purebred Holstein sires in a few years."—W. A. Clemons, Secretary, Holstein-Friesian Association.

Realize the Value of Your Farmyard Manure

Of course you use all your stable and stall manure—sometime or other. But does it first lose its value by leaching and firefanging?

Everything Depends on How it is Used!

Bulletin 223, issued by the Ontario Department of Agriculture, proves the importance the Department places on farmyard manure, and how it is used.

There is a book published called "Helping Mother Nature, The Value of Manure and How to Utilize It." It's a revelation of how much a farmer can add each year to his profits. It will help every farmer who reads it. We have reprinted it (six chapters) for FREE distribution.

First thing you do, cut out the coupon below, fill in your name and address and mail to us. By return of mail you will receive a copy of the book that will make you see manure in a new and profitable light.

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Absolutely safe for boys. Perfect motor. Speed thirty to sixty miles an hour on level ground. Length of car, 84 ins. Strong construction.

B5

Over the ice a mile a minute. THERE'S the sport! Racing down the wind like a bird a-wing, cheeks glowing, nostrils dilating, every nerve tense with the thrill of the newest, most exhilarating outdoor sport—Aero-sledding. No waiting for favorable winds; you control the speed—the direction—as easily and comfortably as from the seat of the finest racing automobile. The Aero-Sleds are driven by real aero motors and propellers. They don't fly in the air, but they do fly along the ice at a great speed. They are as easy to control as an automobile, and as steady. Boys and girls with rich, red Canadian blood in their veins can drive them easily. In summer you put wheels on and run it on the ground. They are strongly constructed; have three steel runners; have seats for two; genuine aeroplane gasoline motor and guarded propeller, and strong steering gear. Hey! boys and girls, here's the sport! And besides the great Aero-sled you can secure, also absolutely free, a magnificent watch, guaranteed for one year. This is a watch any boy is proud to own.

Live Canadian boys and girls, here's your chance to get both the Watch and the Aero-sled absolutely free. Just send us your name and address. We want you to help us advertise and increase the demand for our new double-strength mint chewing gum, put up in big packages—and sells at 10c a package. Our gum sells like wildfire because every purchaser gets free a $2.50 certificate entitling them to secure a copy of the great patriotic picture in full color "The Story of His Brave Canadian Father, [illegible]. Everybody wants a copy of this wonderful [illegible]. We will send you one free to show you [illegible] and we will send you postpaid and trust you with only 35 packages to distribute at 10c a package and 35 certificates to give away with each package. As soon as you have sold them return us $3.50. You will receive [illegible] as a reward for your work the magnificent Watch and the Aero-Sled as [illegible] without selling another cent's worth of goods. Just by sending us the names and addresses of eight boys who would like to have our fine premiums too and who will be our agents and sell our goods. Send your name to-day to

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FOR A SLUGGISH LIVER.

When the liver becomes sluggish it is an indication that the bowels are not working properly, and if they do not move regularly many complications are liable to set in.

Constipation, sick headache, bilious headache, jaundice, heartburn, water brash, catarrh of the stomach, etc., all come from a disordered liver.

Milburn's Laxa-Liver Pills stimulate the sluggish liver, clean the coated tongue, sweeten the obnoxious breath, clean away all waste and poisonous matter from the system, and prevent as well as cure all complaints arising from a liver which has become inactive.

Mrs. John V. Tanton, Birnam, Ont., writes: "I take great pleasure in writing you concerning the great value I have received by using your Milburn's Laxa-Liver Pills for a sluggish liver. When my liver got bad, I would have severe headaches, but after using a couple of vials, I am not bothered with them any more."

Milburn's Laxa-Liver Pills are 25c a vial, 5 vials for $1.00, at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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Ever Stop to Think

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He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.
Follow his example and write

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for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

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BOOK ON
DOG DISEASES
And How to Feed
Mailed free to any address by the Author
H. CLAY GLOVER, V. S.
118 West 31st Street, New York

Safety first in Feeding.

Two feeds that should be handled with care by hog raisers are wheat bran and cottonseed meal. The bran is all right for old hogs and well-grown shotes, but young pigs sicken on it, if much is given. Cottonseed meal is poisonous, often to a fatal extent, to all ages of hogs. I have known some men to feed it successfully, but they gave very little of it, and said that it was risky, unless one had had long experience with it.

There are two reasons why it is desirable to feed concentrated hog rations mixed with plenty of water, so as to make a thin slop. First, it has been proved both by experiment and practical observation that hogs often do not take as much water as they need for full health, especially in winter when their water supply gets cold. Giving a lot of it with their feed saves handling and makes sure of their taking it. Second, it seems to be the nature of a hog to want feed that is not only nutritious, but filling. The water bulks out the feed and leaves the hog with his digestive apparatus comfortably distended. It is best, of course, to give some bulky feed also, for the same purpose.—G. B. Hill.

Retained Portion of Foetus.

Farmer.—"Cow retained parts of a calf from calving time, over twelve months ago. She is now in good condition and fat. Is there any reason why she may not be butchered? Is there any objection to putting her on the market?"

Answer—This condition is often met with in cattle practice. In some cases the cow will again conceive and bring forth a healthy calf. These cases are generally discovered when the cow is slaughtered for beef. The foetus or a portion thereof is found in a mummified condition, or perhaps only the bones, hoofs or hair may be found. The flesh is good for human consumption."

A few Pointers on Manure Handling.

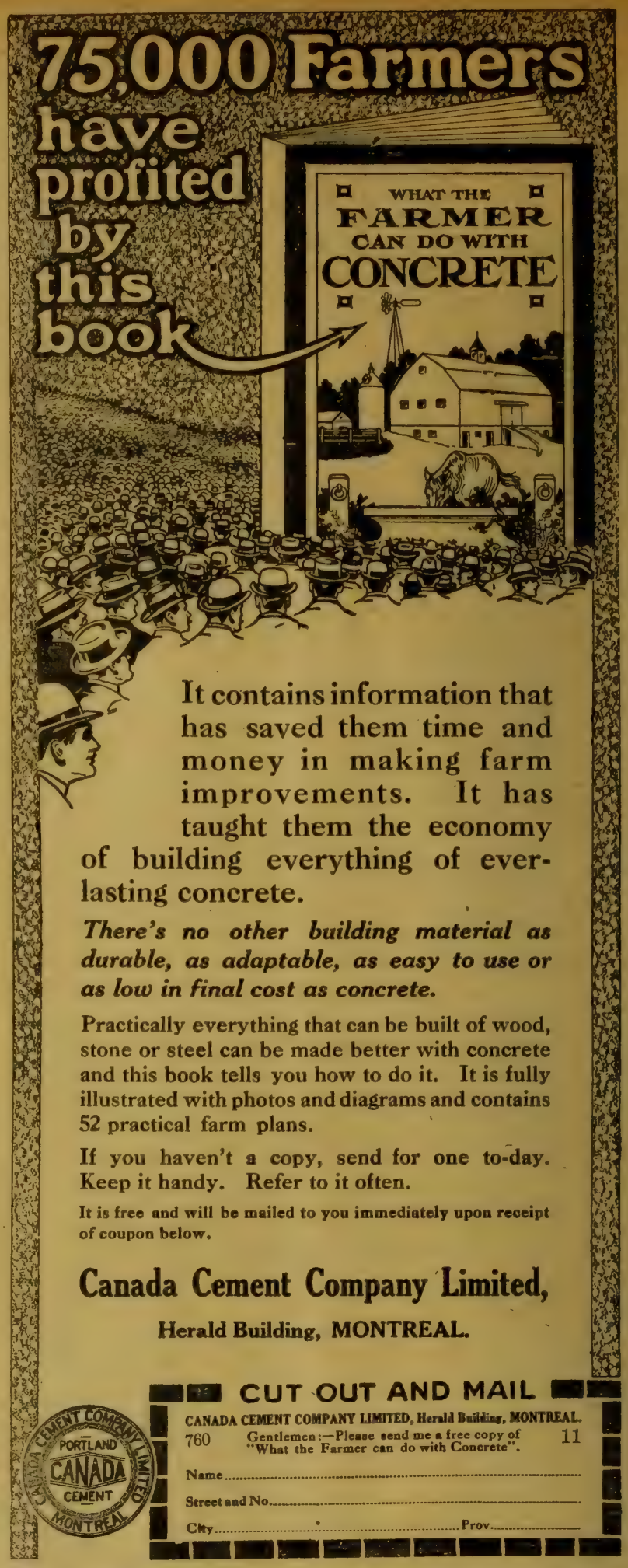
Never permit fermentation or superheating, of manure. It is easy to lose one-half of the original value of a manure heap in a few months if it becomes fire-fanged.

In this country we have less loss through leaching than is the case where winter rains prevail, but a manure pile under the eaves of a building may easily lose heavily from this cause.

Remember that the urine, or liquid portion of the fertilizing elements voided by animals. Do not bore holes in stable floors to facilitate the escape of this portion, but rather use bedding to absorb it and carry it to the land.

To the Hen—Oh, Lovely Hen.

Alas, my child, where is the Pen
That can do justice to the hen?
Like Royalty, she goes her way
Laying foundations every day
Though not for Public Buildings, yet
For Custard, Cake and Omelette.
Or, if too old for such a use
They have their fling at some abuse,
As when to censure plays unfit
Upon the stage they make a hit,
Or at elections seal the fate
Of an obnoxious candidate.
No wonder, child, we prize the Hen,
Whose egg is mightier than the Pen:
—Selected.



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147 West 24th St. RAW FURS, GINSENG, GOLDEN SEAL New York

TRY .AN .AD. .IN .THE .MARITIME .FARMER—IT .PAYS

Nova Scotia Institutes

(Continued on Page 303).

minds, willing to forget self and willing to consider the other person. I don't know that I was ever a very ardent follower of the admonition to "turn the other cheek" but I am a firm believer in the efficacy of "A soft answer turneth away wrath." George Eliott said, "When Death, the great reconciler has come, it is never our tenderness we repent of, but our severity." Let us remember that the only way in which true happiness comes is through service—service in the home, service in the Institute, service in the community, service for our country. "A poor man saved by thee shall make thee rich, a sick man helped by thee shall make three strong. Thou shalt be served thyself by every sense of service which thou renderest."

That then is what the past two and a half years have brought of achievement of which you have a right to be proud. What of the future? I have no fear of that. I have the utmost faith in my women and here this morning when we are by ourselves, I want to say to you that I am of Scotch blood and it's "unco hard" for the Scotch to tell out loud anything about his or her inmost feelings, but I am just simply overwhelmingly proud of you all, glad that I happened to be the person to know all the goodness of you, all the kindness of you, all the dependability of you, and if the time ever comes when I have to resign, I know I shall be jealous of anyone going in and out among you—no matter how much more suited that person may happen to be for the work than I. The future should, however, be more productive of good than the past because we have the added facilities given us in this splendid new building with its up-to-date equipment. Already we have requests for Short Courses of longer duration than the present one and we will be ready to arrange for one whenever twelve or more persons request it and we want to make the attempt before spring brings its busy season. Give me your co-operation and assistance, talk it over in the Institutes. This building is for you and if you desire to have good practical courses in Household Science and its allied subjects, remember, ladies, you have but to make that desire apparent.

I hope that you will find this Convention helpful in some way to your Institute and to yourself, and if for nothing else, that you may go home feeling refreshed in body and mind for the little trip to Truro. I am glad you came, sorry that there were not more of the Institutes availed themselves of the oportunity of sending delegates. The main thing after all is that you may get some help from this Convention, however small, and a convention is a good deal like life—we get back from life just whatever we put into it—and so in a way do we get back from a convention, perhaps not so much from what we put into it as the spirit in which we approach it, and I think that a spirit of helpfulness and encouragement is with us during these days, and we can cultivate no better spirit at any time or in any place.

Take back to the Institutes my sincerest good wishes for the New Year on which we have just entered. May it bring happiness and prosperity in rich and abundant measure not only to the Institutes as a body, but individually to each member.

"Now blessings be upon your house,
Your roof and hearth and walls;
May there be lights to welcome you
When evening shadow falls;
The love that like a guiding star
Still signals while you roam,
A book, a friend—these be the things
That make the house a home."

A Fish Day.

February 29th.

(Canadian Fisherman).

This is a leap year. One more day is added to the calendar, one more working day means a lot in economic value. It means more wealth for distribution, more savings for the thrifty, more knowledge for the student, more ideas for the intellectual, more value all around added to the year. It is our duty to make the most of this extra day.

In our particular sphere of action, could not something be done to enhance and promote the interests of our industry? It strikes me that this particular day of this leap year, February 29th, should be a fitting occasion to inaugurate a day, which would be known in the years to come as, the Fish day of the Dominion. It is said "Every dog has his day," and why should not the fish have its day? To that effect I propose most earnestly that after this year, our Association, at its general meeting, should decide the date of an annual Fish Day. I believe, however, that it should take place during the month of February. Firstly, because in the abstract the month of February in the calendar year is under the sign of the Fishes—this appeals to the imagination.

Secondly, it is during this month that as a rule the Lenten season commences, and we all know the concrete influence of this season on the fish trade.

Thirdly, at this particular period of the year, stocks of all kinds of fish have accumulated in great variety and it affords a greater choice to select from. It is also the period of cold weather when Fish can be conveniently and more safely carried and distributed.

The fish day that we wish to inaugurate should not be merely an occasion to make speeches, to read papers, or to comment on the operation of the Naval Service Department, and revise the statistics. It should be a day of action, and the slogan, "Eat Fish, more Fish and plenty of it," should be more in evidence than ever.

It should be a festival of good cheer, bon viveur, after the style of the old mythological feasts, so that a fat salmon buried in crisp Boston lettuce adorned with thin slices of juicy lemon, cucumber and other tasty seasonings would become as significant, to us, of good things, as Bacchus crowned with vine leaves was to the ancients. Or our Fish Day might be a repetition of those Fairs of more modern epochs. The part of the trade in this festival would be to make a great demonstration by the Fishermen, an exposition of the riches of our prolific waters, decorated with bunting, mottoes, inscriptions; even illuminating signs should be displayed at every market and business place.

There should be everywhere an atmosphere of bustle and activity, so that hesitation to participate for the good influence in this festival would be impossible. In the public demonstration new adherents to the cause would join by myriads. But to make the Fish Day a success and to implant the idea securely in the hearts and minds of our people, it is necessary to give it a wide publicity. From the Arctic Sea to the Great Lakes, from the Atlantic to the Pacific, the press of our country should proclaim the advantages and merits of Fish as a food. Every member of our Association should do his share of advertising in this connection. It is also the duty of each one of the Executive not to share efforts but to co-operate fully with the press and give all attention to the movement.

I say also that our Provincial and Federal Governments, our Transportation and Public Utilities Commission, should throw all their influence to bear upon a subject which is interesting and concerns every citizen of Canada. After all the Fish Day will be a stimulant and a means to develop one of this country's best assets. It is also a patriotic effort in every sense of the word.

Our Fish industry is not less precious than our Mines, our Forests, or our Agricultural Lands, and really a good deal less has been done to develop the Fish industry.

For many reasons our fish industry should receive more encouragement, as it is a better asset for our country than any of the other industries. All that is necessary is to exploit the fish—nature constantly replenishes the losses without any cost or effort to the exploiter.

In the case of our mines, after the ore is taken out, nothing of any value is left. It takes one hundred years to replace the growth of a forest that has been cut, and if farming could be done without tilling the soil, planting the seed and fertilizing, it would then be on the same footing as our fisheries.

And as regards food products, crops will fail, disease will spread and annihilate cattle, but no famine is possible with our fisheries, and the more we develop them the more valuable they will become. So a Fish Day every year is imperative. We must at all costs get the public interested in the development of our fisheries.

Let everyone be ready, then, for the next 29th February, the first Fish Day to be celebrated in this country.

Community Breeding.

A uestion that is commonly asked by dairymen is what breed shall be selected. Before making a choice as to any breed it is well to consider the matter from the community standpoint. Instead of selecting a breed not represented in the community, it is far better to develop a herd of the same breed as already predominates in that locality. Among the advantages of such a system may be mentioned the sale of surplus live stock.

In the older dairy sections the sale of milk products are but a part of the profits derived from the industry as the sale of the surplus stock has become an important factor. The demand for dairy cattle throughout the country is very strong and there are certain districts that are known as Guernsey, Holstein or Jersey countries and to these countries buyers from long distances come knowing that they will be able to find what they wish to purchase. In these sections where one breed predominates, community breed associations are formed, where the subject of breeding is studied and the members a erstimulated to take advantage of their opportunities.

By this co-operation, the cost of advertising, official testing for advanced registration is lessened and material advantages are obtained in the buying of feed, the marketing of their dairy products an dthe fighting of disease.

It is of great importance in regard to breeding animals. It is a well-known fact to dairy breeders that high class bulls are relatively scarce. Many valuable sires have been lost before their owners realized their worth. By trading bulls through the medium of a community association it is becoming possible to retain the best bulls in service, not only reducing the expense for this purpose, but also makes wide use of the blood that is found to sire especially meriterious animals.—Prof. E. V. Ellington, Idaho Experiment Station.

Cribbing or wind sucking is a vice, not a disease, and cannot be cured by medicine. Applying a mixture of red pepper and soft soap, or better still, aloes, around the stall will sometimes stop this habit.

Stumps Out—Quick and Easy

Here at last is the land clearing device you have been looking for—the Kirstin One-Man Stump Puller—a simple, powerful, practical Puller that one can handle and operate with ease. No big, expensive, cumbersome outfit—no horses to drive—no extra work of any kind. With the Kirstin, one man *alone* clears land quickly, easily, economically. Costs little to begin with—nothing for upkeep—and costs far less to operate than any other hand or horse power puller on the market. In the

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With the Improved Double Leverage Kirstin you can clear over an acre from one anchor. Also no time wasted in frequent re-setting of puller. The Kirstin is designed to save time. When you get a Kirstin you get a complete, practical Stump Pulling Outfit *at little cost*—and you are protected by the *Kirstin Iron-Clad Guarantee.*

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BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
Howard W. Corning, Cheggogin, Yarmouth Co., N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B
Jos. R. Taylor, Upper Dorchester, N. B.
John B. Barton, Welsford, N. B.

Ayrshire Oatt

C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
The S. H. White Co. Ltd., Forest Glen, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
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Shorthorn Cattle.

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Isaac Chipman & Son. Chipmans Corner, Kings Co., N. S.

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E. W. Heurtley, P. O. Sutherland's River, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
E. W. Heurtley, P. O. Sutherland's River, N. S.
Steward Bros., Murray River, R. R. No. 1, P. E. I.
J.W.Callbeck & Sons, Box 386, Summerside, P.E.I.
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Hon. W. Owens, 4026 Dorchester St., Montreal.
The S. H. White Co. Ltd., Forest Glen, N. B.
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Wm. A. Churchill, Lakeside. Yarmouth Co., N.B
Sydney J. Goodliffe, Sussex, N. B.

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Thos. W. Prowse, Union Road, P. E. I.
W. H. Moore, Scotch Lake N.B.
Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

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We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

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Dark Cornish Pairs, $2.00; trios, $3.00. S. C. Buff Leghorn Cockerel or Silver Campine Cockerel, $1.50 each. Utility S. C. Red Cock, $1.50. Utility R. C. Red Cock, $1.50. 1st Amherst Cock, R. C. Red, $15. 3rd Amherst Cock, R. C. Red, $10.00, also one yearling R. C. Red Cock, $5.00 Have no young stock for sale. Will buy a few dozen hens, any breed.

GEO. H. SEAMAN,
Box 325. Moncton, N. B.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

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FOR SALE.—A pure-bred Percheron Stallion, three years old.—LEO. A. MILLER, Linville, Car. Co., N. B.

VALLEY FARM HOLSTEIN OFFERING—One pure bred Bull, dropped last February, also one Heifer Calf, three weeks old.—W. G. CAMPBELL, Salisbury, N. B.

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FOR SALE.—Bronze Turkeys, large, healthy birds of Bell strain, bred from prize winners. Toms, $7 00; hens, $4.00. Only a few left.—HOTEL DIEU FARM, Chatham, N. B.

YOUNG PIGS FOR SALE.—Purebred Berkshires, registered; Purebred Yorkshires, but not registered. Also Berkshires and Yorkshires crossed.—R. O'LEARY, Richibucto, N. B.

PURE BRED JERSEY COW.—I have for sale this cow of extra good butter and milk qualities. Freshens February 10th. For particulars by mail apply to C. FRED FAWCETT, Upper Sackville, N. B.

JERSEY BULLS of good type, ready for service, also Bull Calves, all from good producing stock. In Berkshires one Boar, 2 years old; one Sow and young Sows from 6 to 8 weeks.—J. R. SEMPLE, Tatamagouche, N. S., R. R. No. 1.

"VOL-PEEK" MENDS pots, pans, buckets, boilers, graniteware, tin, aluminum, in two minutes, without tools. "Put it on with your finger," enough to mend 50 holes 25c, postpaid. Agents wanted everywhere.—H. NAGLE, Montreal.

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FOR SALE.—One Jersey Bull, four years old, sure getter and quiet. Offspring of a cow and bull brought from Hood's Farm by Jordan.—R. W. JONES, Steeve's Mountain, N. B., via Boundry Creek.

FOR SALE.—One pure bred registered Guernsey Bull, now 23 months old. This Bull is a first class individual and unites the best strains of the Corning and Roper herds. Well suited for an agricultural society or private herd. Price reasonable.—W. E. READ, Bear River, N. S.

FOR SALE.—Black Percheron Stallions, have two foaled 1903. Both imported, weigh 18 hundred each and are two of the best stallions in New Brunswick. They have colts here and lots of mares in foal. Will sell one of them. Also have an imported Clyde Mare, 7 years old, which I will sell.—WARREN C. BULL, Woodstock, N. B. R. F. D. Route 4.

PURE HOLSTEIN BULL CALF (registered) FOR SALE—Age 3 months, nicely marked, weighed 115 lbs. at birth and now weighs nearly 300 lbs. Sire was twice Canadian National Champion. Dam winner of her class at St. John, 1914, and a big milker now in R. O. P. test. This combination of size, constitution and production makes this Bull Calf a sure herd improver. Apply J. H. STOCKTON, Bull's Creek Farm, Woodstock, N. B.

FREE, to stockmen and poultrymen our 80 page illustrated booklet on feeding; how to construct a house which will accomodate 100 hens; gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies. Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry foods and remedies.—THE W. A. JENKINS MFG. CO., London, Canada.

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First prize Registered Holstein Bull over two years old, $100.

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1.25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

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Percheron Stallion
GLENEUR
FOR SALE !

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

Wm. Jamieson, - - Sussex Corner, N. B.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered, Holstein Bulls, 16 and 18 months old, in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

Valley Farm Holstein Offering

One pure bred Bull Calf, dropped last February.

W. G. CAMPBELL,
Salisbury, N. B.

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For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
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Volume 21. SUSSEX, NEW BRUNSWICK, FEBRUUARY 22, 1916. Number 10.

ORCHARD FERTILIZATION

Address by Prof. W. Saxeby Blair before the N. S. Fruit Growers' Association.

Since our fertilizer supply is being shut off owing to the War it seems desirable that we should modify our orchard parctices in order to meet conditions as they exist. With an unlimited supply of potash at a reasonable rate we have little need to worry about the potash requirements of our orchards, in fact in many cases probably more potash than actually necessary has in the past been used. This, however, does not say that we can do without this element in years to come. The hope is that the shortage in this fertilizer is only temporary. Nitrogen also has in the past been reasonable as compared with present prices of $70.00 per ton for nitrate of soda which last year cost us only $50.00. The various phosphotic fertilizers have also advanced.

An acre of apples producing 100 barrels according to analysis will take from the soil aproximately as much nitrogen and phosphoric as an acre of wheat producing 15 bushels, and about 3 times as much potash.

	Apples.	Wheat
Nitrogen	33	33
Phosphoric Acid	7½	10
Potash	45½	16

Experiments have shown that a fertilizer carrying 30 lbs. nitrogen, 50 lbs. phosphoric acid and 50 lbs. potash should be furnished to a full bearing orchard annually. It will be noticed that the phosphoric acid called for is much in excess of the amount the plant requires according to analysis, but in actual practice it is found that plants generally require an amount of phosphorus in excess of that called for from a chemical analysis of the product grown.

Considering the fact that nitrogen is one of the most important fertilizing elements it is well for us to see that we are making the best use of the means at our disposal to obtain all of this element we can from the air by growing leguminous orchard cover crops. An analysis of the various cover crops in their green state gives a comparative idea of their fertilizing constituents.

	Common Vetch, ready to bloom	Peas 2 to 3.	Crimson.	Red Clover.
Nitrogen	.65	.45	.43	.41
Phosphoric Acid	.14	.11	.13	.13
Potash	.47	.36	.49	.45

It will be noticed that according to this the crops ran fairly uniform in their green state.

Experiments conducted at Ottawa gives the following comparative values of the different leguminous cover crops seeded July 13th, and collected October 20th.

	Weight of crops per acre tons.	lbs.	Nitrogen. per acre.
Mam Red Clover stems and leaves.	6	1310	82
Mam Red Clover roots	3	1200	48
Total	10	570	130
Common red Clover stems and leaves.	4	1779	70
Common red Clover roots	2	1445	47
Total	7	1224	117
Crimson Clover stems and leaves.	11	234	85
Crimson Clover roots	3	201	19
Total	14	435	104
Hairy Vetch, stems and leaves	11	1895	129
Hairy Vetch, roots.	2	345	18
Total	14	240	147

The common vetch was not grown for comparison in this test but the chances are that it will compare hardly as favorably as the hairy vetch, but better than crimson clover.

That the turning under of such a cover crop does supply a large amount of nitrogen which is taken from the air is shown by tests conducted by following grain on land which had previously been in grain with which red clover had been sown as compared with adjoining plots not seeded to clover. The results were as follows:

FIRST YEAR.

	Straw. lbs.	Grain. Bush.	lbs.
Banner oats, where clover seed withthe grain crop had been turned under..	5110	55	
Banner oats, where no clover had been seeded with the grain crop	2260	44	4
Gain from Clover	2850	10	30

SECOND YEAR.

Banner oats, where clover seed withthe grain crop had been turned under..	3270	44	38
Banner oats, where no clover had been seeded with the grain crop	2320	33	36
Gain from Clover	950	11	2

Tototal gain 3800 lbs. straw, 21 bushel 31 lbs. grain, for the two years from seeding clover with the grain crop, the growth of which was plowed under in the fall of the same year. This increase of crop is equal to approximately $25.00 at present prices and the gain must have been due principally to the one crop of clover.

Similar tests with corn and potatoes show the following gains.

Similar tests with corn and potatoes show the following gains.

	Tons.	lbs.
Corn, where clover sown with grain was plowed under	19	1560
Corn where no clover was plowed under	16	1160
Gain from clover	3	400
	Per Bus.	acre lbs.
Potatoes where clover sown with grain was plowed under	320	
Potatoes without clover	280	40
Gain from clover	39	20

Repeated tests show that the clover does not lessen the yield of grain when seeded with it, and similarly a cover crop is not a detriment in orchard practice but rather a gain.

It has been said by some one that a good crop of clover turned under is worth as much in fertilizing value as ten tons of manure per acre. It would seem from what we can find out that this is pretty largely true. At least investigation shows that a vigorous crop of clover contains in stems, leaves and roots:

100 lbs. nitrogen.
30 lbs. phosphoric acid.
85 lbs. potash.

and well made barnyard manure from well fed animals contains in 1 ton:

10 lbs. Nitrogen; in 10 tons....100lbs
5 lbs. Phosphoric acid, 10 tons. 50lbs
9 lbs. Potash; in 10 tons..... 90lbs

At the present price of commercial fertilizer; that is, Nitrate of Soda, $70 per ton; Slag, $16 per ton, and muriate of potash, we will say $150.00 per ton, although even at that price I doubt that it is available, but probably if you are buying mixed fertilizer you will pay at that rate per lb. at least. Nitrate of soda contains about 15% nitrogen, one ton would contain 300lbs. which at $70 would be 23 1-3 cents per lb. Phosphorus approximately 6 cents per lb. and potash at above assumed price would be 15 cents per lb., as muriate of potash contains 50% potash, or 1000 lbs. in one ton.

Figured then on this basis a ton of well made stable manure from well fed stock would be worth as follows:

10 lbs. Nitrogen at 23½c	$2.35
5 lbs. Phosphoric Acid at 6c	.30
9 lbs. Potash at 15c per lb.	1.35
Value per ton	$4.00

Considering therefore the scarcity of potash we cannot afford to let this important fertilizing element be lost through our method of handling.

This is calculated according to the prices you have to pay for the various fertilizing constituents in commercial fertilizers at the present time and does not include the value of manures for their humus contents. In both cover crops and manure we are liable too often to forget about the important part humus plays in producing conditions suitable for crops other than the supplying of necessary plant food.

When speaking of well fed and well kept stable manure it is well for us to keep in mind that manure from animals poorly fed is not nearly as valuable as that from well fed animals, and that a manure from which the liquids have been lost is not nearly as valuable as one where it has been retained. Just in this connection it is interesting to note that almost half of the total value of the excrement lies in the urine. Particularly is nearly four fifths of the potash found in the liquids voided by animals. The following table gives the per cent of the different fertilizing ingredients found in the excrement of the cow and horse.

	Nitrogen. %	Phosphoric Acid. %	Potash %
Horse urine	1.52	tr.	.92
Horse, solid excrement	.55	0.35	.10
Cow urine	1.05	tr.	.36
Cow, solid excrement	.43	0.12	.04

In the face of this we see absolute carelessness on the part of many farmers in not using absorbents in the stable to retain all the liquids voided by animals and also often a great waste from careless handling of manures which should be worth from $3.00 to $4.00 per ton.

It is estimated that the number of pounds voided by full grown animals in 24 hours is as follows:

	Solids lbs.	Urine lbs.	Total Excrement
Horses	33	8	41
Cows	49	19	68
Sheep	2	2	4
Hogs	4	3	7
100 hens	8.5		8.5

The whole point of this address so far is to show the comparative value of the leguminous crops as compared with stable manure, and if possible encourage a more extensive growth of the nitrogen gathering crops in our orchards.

R. J. MESSENGER
President of The Nova Scotia Farmers' Association.

It would seem to me in the face of conditions that at present exist we should adopt some system to make a greater use of the clover and vetch than we have in the past.

I am often asked whether I would advise lime for an orchard. My reply is yes for the purpose of starting a clover crop if for nothing else. It is doubtful of what value lime is to us to increase our apple crops, but certainly many orchards will not produce clover without lime. The quantity per acre required will vary somewhat, and in many cases all the lime requirements may be made up by a judicious use of Slag. I am convinced by our experiments at Kentville that lime in some form is essential in order to get a growth of clover on many of our soils. The reason why vetch has given better results than clover is that vetch will thrive on soils which are quite acid although liming is usually helpful to it. It has therefore a far wider range of adaptability than clover which tends to disappear altogether when soils become exceedingly acid.

The following experiments conducted at Kentville are of particular interest at this time as having a direct bearing upon the growth of cover crops. The Nitrate of Soda and Slag were applied in 1913 and 1914 but not in 1915. The experiment covers a three year rotation, potatoes, oats, clover.

	Potatoes 1913 Bushels	Grain 1914 Bush.	Lbs.	Clover 1915 Lbs.
150 lbs. Nitrate of Soda, 50 lbs. Slag	196.5	54	4	9521
50 lbs. Slag	160.0	33	18	6987
Gain	36.5	20	20	2534
150 lbs. Nitrate of Soda, 500 lbs. Slag	196.5	54	4	9521
No Fertilizer	161.5	30		3000
Gain	35	24	4	6521
500 lbs. Slag	160.0	33	18	6987
No Fertilizer	161.5	30	00	3000
Gain	1.5	3	18	3987

The plots on which no fertilizer was used had no clover at all whereas the slag plots were practically entirely clover.

In another test where the nitrogen content of the fertilizer was made up entirely of dog-fish scrap fertilizer to represent a 4 per cent mixture and acid phosphate and muriate added to make 4 per cent. phosphorus and 10 per cent potash, and lime added to one plot, the results were as follows:

	1914. Straw Lbs.	Grain Bush.	Lbs.	1915. Clover Lbs.
215 lbs Fish scrap				
233½ lbs. Acid phosphate				
100 lbs. Muriate of Potash	2516.2	57	8.2	4567.5
No fertilizer	1787.3	45	12.5	2405
215 lbs Fish scrap				
233½ lbs. Acid phosphate				
100 lbs. Muriate of Potash				
3000 Ground Limestone	2625.	66	6	6760

In this case also the difference in yield was made up principally from the extra growth of clover which was even and strong on the limed plots.

It is interesting to note that lime of itself will not always give increased crops. On poor soils there is not the gain one might expect for lime will not furnish the necessary nitrogen, potash and phosphoric acid.

Just in this connection we hear considerable about the ability of lime to liberate potash from the soil. It is no doubt true that where soils have been fertilized generously with potash in recent years the use of lime will add noticably, for a time, to the quantities of potash which plants can take from the soil. This is due to the fact that lime enters into certain compounds replacing potash, which then passes into solution in the soil water or is held in the soil in such a physical state as to be more readily available than before. It is obvious that an end to such a possibility will soon be reached, for there will not be sufficient potash remaining in these readily decomposable compounds to be liberated to any practical extent. The most of the potash in soils is present in such combinations that lime will have on practical effect upon it. It seems to me little can be hoped for in a practical way by attempting to set free potash for crops by liming.

The fact that large quantities of potash have in recent years been used in the Valley will materially help, but the source of our potash supply in the future should be through the clover plant with its deep feeding root system which will do more to liberate potash than will the lime.

Many of our orchard lands are so deficient in humus and plant food that they will not grow cover crops even if lime is used. If such is the case a system should be adopted to give to the orchard sufficient stable manure to get a good clover crop started after which there will be little difficulty in securing a good catch. From 5 tons of good stable manure to 10 tons of poorer grades per acre should be sufficient if properly applied to give an excellent catch. If necessary to this soil should be added about from 2 to 4 tons of ground limestone per acre. In some cases Slag is all that will be required and this can be applied at the rate of 1000 lbs. every three years. I am of the opinion that it is best to give a good application at once rather than spreading it in small quantities over several years. In other cases it may be that lime only is required. This can be determined by the vigor of growth in the orchard and quality of the fruit previously produced.

To bring my remarks to a conclusion therefore it is clear that we should depend more than we have been doing upon clover, that if necessary stable manure should be used to give the necessary plant food and soil conditions to secure a good stand, and liming usually will be necessary. Basic Slag may in some cases be used to furnish the lime requirements in addition to the phosphorus. In case acid phosphate is used lime should always be used. The potash can in a measure be secured by taking more care of our stable manures and using more absorbents such as straw, sawdust and dried peat to hold all the liquids voided by our farm stock.

Results Obtained at the Dominion Entomological Laboratory During 1915

By G. E. Sanders, Field Officer in Charge, Annapolis Royal, N. S.

Before taking up the subject which I am to speak on, I wish to thank you fruit growers for the support which you have given so generously to our work in the past. The new building which you asked for at your last annual meeting has materialized in an up-to-date four room laboratory on land which the school board of Annapolis Royal very kindly placed at our disposal. The assistance which has been rendered by a number of your members individually, including Mr. F. H. Johnson, S. B. Chute, A. Fitz Randolph and many others has enabled us to do more valuable work this last season than in any previous. I am only repeating what Dr. Hewitt and many others tell me, when I say that the Dominion Entomological Laboratory has been a success, in that it has helped in causing more and better fruit to be grown in Nova Scotia, and the main reason for this success has been the attitude of your fruit growers. A number of you have put yourselves out to help us in every way possible to secure new information in regard to spraying, and you have helped in acting on and spreading conclusions which we were able to draw from such information. Today the average Nova Scotia grower is living up more nearly to the best information he has on spraying than any other grower in America, and I think you will all agree that there is still plenty of room for improvement, so I am going to ask you to keep on helping in securing information and in persuading your neighbors to spray, until we have every orchard in the valley properly sprayed; then we will be able to deliver apples to the English trade that we may be proud of and that we may advertise even more loudly than we do our apples of the present time.

Spraying Conditions for 1915.

Probably we had more damp weather during the spraying season of 1915 than we ever had before. According to my diary rain fell in greater or less quantities on 21 days during May, and on 18 days during June. This continuous dampness caused an immense amount of burning wherever lime sulphur was used, and although most growers are blaming the particular brand of lime sulphur that they used themselves for the burning, we find that all brands burned to about the same extent, and it was the season and too strong a solution in many cases that were responsible for the burning rather than any particular brand. In addition to burning the leaves we have good evidence during the past season that lime sulphur used too strong will cause a reduction in set of fruit and for the coming season we recommend its use at not stronger than 1.007 specific gravity after the blossoms fall. As far as we can now determine, the stem of the young apple is most susceptible to injury about ten days after the blossoms fall, and for that spray we are recommending lime sulphur a little weaker than 1.007 specific gravity. We have not yet finished our work along this line, but following our principle of giving you our findings just as soon as we are certain of our results. We must warn you against using lime sulphur at greater strength than recommended. For further information, see the spray calendar gotten up by Prof. Brittain and myself.

New Nozzles

From the growers' standpoint, probably the most valuable piece of work done during the past years has been the testing of the new nozzles put out by the Friend Manfg. Co.

These nozzles, the Drive and Calyx, are suitable only for power outfits at a pressure of 200 pounds, and are the finest for their respective purposes that I have ever seen. As only one nozzle is needed on each rod, the cost of them is about two fifths of the two nozzles and Y now used on each rod.

First, to take up the drive nozzle: It is primarily an insect nozzle, throwing a coarse spray from 2 to 3 feet wide at high velocity. It drives into chinks and crevices which the ordinary mist nozzle does not wet at all, and so gives us very much better control of all the insects that effect the apple before the blossoms. In the case of the budmoth which are our most injurious insects, we had during the past season seven comparisons of the drive nozzle and mist nozzle in budmoth control, and in every case the drive gave the smallest number of apples injured by budmoth when picked. We found respectively 40.9, 34.3, 87.8, 30.8, 3.1, 60.5 and 33.6 per cent more apples injured by budmoth in the plots where the mist was used than in the plots adjoining where the drive was used.

In the case of the fruit worms, we found practically the same increase in control. We found respectively 11?, 22.2, 46.4, 35.9, 9.8, 2.5 per cent more apples injured by fruit worms where the mist nozzle was used than in the adjoining plot where the drive was used. In one pair of plots we got exactly the same number of apples injured in each plot. As was suspected, the increased control of fruit worm came mostly from the mechanical jarring of the leaves, the larvae being very active and in the habit of dropping to the ground when disturbed This was proved out by spraying two plots with water only. When the water was applied with a mist nozzle we got 8 per cent of the apples injured by fruit worms, and where it

was applied with the drive nozzle we got 4.5 per cent only injured, proving that the mechanical action of the drive nozzle is an important factor in the control of fruit worms.

One drive nozzle will at the same pressure throw almost as much spray as a pair of mistry or whirlpool nozzles; the advantages of it lie in the high velocity of the spray as it leaves the nozzle. It throws a good spray from 4 to 6 feet from the end of the rod and is useful on high trees; the spray going at much higher velocity than from the ordinary nozzle drives into clusters of leaves, curled up leaves and places that the ordinary nozzle cannot touch, and so gives better control of budmoth, fruit worm and codling moth as well as the aphids and plant bugs of which Prof. Brittain has spoken. The disadvantages of the drive nozzle lies in the narrow spray which it applies. In the hands of a careless operator narrow portions of the tree will often not be covered properly, and inferior spot control result; but with careful men we got on several occasions better spot control this year from the drive than from the mistry nozzles against which it was tested. We recommend the drive nozzle above all others for the two sprays before the blossoms.

Calyx Nozzle

The Calyx nozzle resembles the mistry or whirlpool in shape, size and type of spray aplied. One Calyx nozzle will throw fifty per cent more spray than a pair of mistry or whirlpool nozzles. It is primarily a black spot nozzle, throws a very fine spray and a lot of it. With a smart man on the rod the calyx nozzle will cover a tree more quickly and better than any other nozzle I have seen, but it is no nozzle for a lazy man. It throws out too much spray if he stands to talk between the trees. Properly handled, the Calyx nozzle should prove a time and money saver in any orchard. Like the drive nozzle the Calyx requires 200 lbs. pressure to work properly. The two cleanest lots of Gravensteins that I saw in 1915 were sprayed with Calyx nozzles, namely Mr. R. H. Fowler's which packed out 83 per cent No. 1, and Mr. Alfred Messenger's which packed out 77 per cent No. 1, tree run. We recommend the Calyx nozzle for all sprays after the blosoms.

Budmoths

During the past season we found in addition to the three species of budmoth already recorded from the Annapolis Valley a fourth species, The Lesser Budmoth, (Recurvaria Nanella Hubn), an insect of European origin, where it is a serious pest on apple, pear, plum and peach. It was probably brought to American some years ago, as it has already spread over the eastern half of the United States as far west as Michigan and was this year found for the first time in Canada, being recorded both from Nova Scotia and Ontario. The life history and treatment of this new budmoth is on the whole similar to the three that we have already investigated in Nova Scotia. One point in which the treatment for it differs from our other three budmoths is in the effect which the odour of sulphur sprays have on it; almost complete control having resulted from a late dormant or semi-dormant lime sulphur or soluble sulphur spray. The spray does not seem to kill any larvae in their hibernating quarters, but when they emerge in the spring the odor of lime or soluble sulphur appears to nauseate them so that they drop to the ground rather than bore into the opening buds on such ill-smelling trees (Bull. 113, U. S. Dept. Ag.) Just what this new budmoth will do in the future we cannot of course tell. It is a native of Europe, imported into this country without its native parasites, and even in Europe it is a serious pest. So we may have in it a very much more serious pest in the future than in the past.

Now in regard to the control of the budmoths that we have been working on in the past; we have found this year means of controlling them better than ever before. We have always been in doubt as to whether two sprays before the blossoms were better in budmoth control than one spray about midway between the two. This year we tested this point out, and found that where we used only one spray we killed 50 per cent. of the budmoths, but where we used two sprays we killed 75 per cent of them, or the extra spray increased our control of budmoth by 50 per cent. I have already spoken of the superiority of the drive nozzle in budmoth control, so our recommendation for budmoth now is, spray with the drive nozzle at 200 lbs. perssure, first when the leaf is the size of a ten cent piece, and again imemdiately before the blossoms, using 5 to 7 lbs. of paste lead arsenate or 1½ to 2 lbs. of dry arsenate of lime per 100 gallons with of course the sprays after the blossoms which control a great number of them.

Brown Tail Moth

We have on the whole had two very successful years in brown tail moth control. Last year we found 18,154 nests in the province against 24,156 nests the previous year, following the big flight from the New England States, or a decrease of 6,002 nests. This year up to date we have found on the whole a big decrease, with increases in a few isolated localities. Only ten inspectors are employed, five by the Dominion and five by the province, and they have to cover all of Shelburne, Yarmouth, Digby, Annapolis, Kings, Hants and part of Cumberland, Queens, Lunenburg and Halifax counties—or approximately two million apple trees scattered over that territory, so they have little time for other than orchard property, excepting when thorn scrub is known to occur. That they have prevented the brown tails from ever doing a dollars worth of damage up to date in Nova Scotia is, I think, something that we can point to with pride, for Nova Scotia is the only locality in which the climate is very favorable to brown tail moth development where it has been controlled and prevented from doing damage. We found this year a very interesting outbreak which goes to show in a very striking manner what the brown tails would do in Nova Scotia if left uncared for. Just south of the church in Torbrook and across the river there is a thorn scrub in a pasture which none of our inspectors knew of and so had never before been visited; this year a few nests were found in apple orchards near by and an irregular line of nests traced from bush to bush until it led to the heaviest infestation we have yet found in any part of the province; over 1500 nests have already been taken from this pasture and there are probably 500 more yet to come. The whole scrub does not cover over 30 acres, the most heavily infested portion about ten acres; there were enough brown tails present to eat every green leaf off the central ten acres. The infestation had been running there for four or five years. I cannot blame the inspector who worked that territory last year for not uncovering the infestation, for in order to get his territory done he had to confine himself almost entirely to orchard inspection. If we were to inspect pastures and woodlots we should need three times the number of men. The Torbrook outbreak shows in a very striking manner the state in which the unsprayed and half sprayed orchards of the Annapolis Valley would be in if the brown tail were allowed to run unchecked. We have found that a campaign for more spraying has given us good returns in the control of brown tail moth, so we have our inspectors call on each man whose property is infested with brown tails and inform him of the fact, advising him to look for more nests after they have finished his orchard, and also to persuade his to spray if possible.

We have as inspectors the best men obtainable, mostly graduates of the Nova Scotia Agricultural College. They have all the data obtainable on spraying at their finger tips. If when you see them going through your orchard, you want to know if Aphids, Plant Bugs, San Jose Scale, Canker Worm, Tussock Moth, or any other pest requiring special attention are present, stop them and have them make an inspection, and get what information you want on spraying from them. They are sent out to help you in your orchard problems as well as to collect brown tail moth nests, so make all the use you can of them. On the other hand, while we have the best inspectors obtainable, they have a very large territory to cover and cannot get every last nest for a great number of reasons. You may find a nest left after they have gone through your orchard. We should like every owner to inspect his own orchard; if he finds more than one or two nests after the inspectors, we would consider it a favor if he would write in to the laboratory stating the fact. We want inspectors who will do their work right. If they do not do it right in an orchard, the owner should let us know. If your orchard is infested with brown tail moths, and if it is, the inspectors will call on you informing you of the fact, try to spray the orchard next spring. If it is your neighbor's orchard, try to persuade him to spray; do not allow a public nuisance, such as an orchard infested with brown tails, to be maintained in your neighborhood.

Canker Worm

Last year in this meeting I warned you of a very wide spread outbreak of Canker Worm, which would damage a great many orchards in the spring of 1916,—that warning was based on reports of our brown tail moth inspectors. This year, reports from the same men say that the infestation is increasing and that a great amount of damage will be done next spring. A few owners have already applied tanglefoot bands. Where these bands were not applied, very thorough spraying in 1916 is all that can now be depended upon to control canker worm. If you say any number of light moths about the trunks of your trees during November you can depend upon it that they will eat more or less of the leaves from your trees next spring, and will so cause you some loss.

In regard to spraying for canker worm, we of course all know what a hard insect it is to poison. When more than half grown it apparently thrives on arsenic, so in order to control it we must have the leaves thoroughly coated with poison when it emerges from the egg and begins feeding, for it is then comparatively easy to kill. Most of the canker worms emerge about five days before the blossoms show pink, so if your orchard is infested put on the pink bud or second spray a couple of days earlier than usual, or else retard your semi-dormant or first spray until the leaf is as large as a 25 cent piece, using in both sprays a larger quantity of poison than usual.

The present outbreak is wide, covering the whole Valley and in a general way only the orchards that have been heavily sprayed for the past two years are in any way free from them.

Tussock Moth

We are now on the eve of another outbreak of Tussock moths. Inspection has shown this outbreak to be widespread, probably heavier in the west end of the valley than in the east. The Tussock moth was particularly bad in the east end of the valley in 1906; the next outbreak in 1912 did not affect the valley so much. This present outbreak will damage a few orchards in 1916, but will not reach its height until 1917. In one orchard this year I found a large amount of fruit disfigured by the feeding of the larvae. The injury might, at first glance, be mistaken for that of the fruit worm, but the feeding is done later and does not heal out so perfectly. The apple is seldom deformed, the edge of the eaten areas are irregular, often extending irregularly over half of the apple.

The eggs of the Tussock moth were deposited by the female about August 30, about 150 eggs in a cluster, on the old pupa case and covered with a frosting or froth to protect them. They may be found on any part of the tree, usually on the fruit spurs of the apple. The young larvae will emerge during the last week of June and feed for two or three weeks on apple leaves, later feeding on the fruit to a certain extent. In order to control Tussock moth we must therefore put poison into our last summer spray, or that going on during the last week of June. If the eggs of Tussock moth are in any way numerous in on orchard, it would pay to put in a larger quantity of poison than usual in the last spray.

Results of Spraying in Orchards.

Last year I gave you a sheet showing the percetnage of No. 1 and 2 Gravensteins packed out by the Round Hill Fruit Company, with the number of times each orchard was sprayed, an dother details, and I am giving here the same table for the same company for the year 1915. The percentage of No. 1 and 2 are not as high as last year, but as a demonstration in favor of spraying the results are as good.

(Continued on Page 314)

PACK OUT OF GRAVENSTEINS, ROUND HILL FRUIT COMPANY,
Season of 1915,

	% No. 1 and 2.	Sprays used 1.2.3.4.5.	Nozzle used.	Character of Trees.	How planted.	Whether exposed or not.
1	68	1.2.3.4.5.	Drive	Thick	Close	Exposed
2	62	1.2.3.4.5.	Drive	Thick	Close	Exposed
3	53	2.3.4.5.	Mist	Thick	Close	Exposed
4	51	2.3.4.5.	Mist	Thick		Exposed
5	50	1.2.3.4.	Drive	Thick	Open	Sheltered
6	47	1.2.3.4.	Mist		Close	Sheltered
7	41	2.3.4.	Drive	Open	Close	Sheltered
8	40	1.2.3.4.	Mist	Open	Open	Exposed
9	40	2.3.4.	Drive	Open	Open	Sheltered
10	37	2.3.4.	Mist	Thick	Open	Exposed
11	35	2.3.4.	M&D	Thick	Close	Sheltered
12	33	2.3.4.	Drive	Thick	Open	Sheltered
13	29	2.3.4.	Mist	Thick	Close	Sheltered
14	26	2.3.4.	Drive	Thick	Close	Exposed
15	25	2.3.	Mist	Thick	Open	Exposed
16	23	2.3.	Mist	Thick	Close	Exposed
17	22	3.	Drive		Open	Exposed
18	20	None			Open	Exposed
19	16	2.3.	Mist 2 Dr. 3		Open	Exposed
20	6	None		Thick	Close	Sheltered

Power Pump Used.

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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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FEBRUARY 22, 1916.

DATES OF ISSUE.

March 7-21
April 4-18
May 2-16
June 6-20

WASTING FERTILIZER

Our farmers are confronted this year with abnormally high fertilizer prices and consequently they are turning their attention to the manure produced on their farms. At least one third the value of our barnyard manures is lost by neglect on the part of the stock owners who must make up for this loss by expending enormous amounts of their surplus cash in the purchase of commercial fertilizer. "'Tis wilful waste makes woeful want." Many of our farmers are beginning to wish that they had been more careful to conserve all available farm yard manures.

A writer in Hoard's Dairyman says: "The manure pile is never still. From the minute the hired man finishes the morning task of cleaning the stables, the elements in the manure begin action. Much of the nitrogen turns to ammonia and evaporates into thin air. Some is converted into nitrates and, with the first rain, is washed away. Still more becomes nitrogen gas and disappears." "There are two ways to prevent this loss—have a cement cistern for the manure, or haul it to the fields every day or so. Cement cisterns can be built with little expense, and they soon pay for themselves. They are especially valuable in saving the liquid excrement, which contains the most nitrogen and potash. The best results are obtained if the liquid manure is kept separate from the solid manure. When applied to the fields, however, solid manure should be added to it, otherwise the ground becomes hard for want of humus.

"Cisterns are coming into more use every year because on most farms it is not practicable to haul out the manure every day. Even where the cisterns are not yet installed, better care is being taken of the manure. And the old way of turning the pile over with a fork two or three times a year so it will rot well is being abandoned. True the rotting process destroyed harmful weed seeds, sometimes, but there was also a heavy loss of nitrogen and ammonia, as well as wasted plant food, because the rains washed away much of the decayed straw, etc. Now rotted manure is used principally by gardeners and it is the best for that purpose. The reason for that is that gardeners want the most plant food in the least possible bulk. For the farm, however, where not only plant food is wanted but also considerable humus, or decayed organic matter, the fresh manure is the best.

"Comercial fertilizers are good, and they serve their purpose. But it's a wrong policy to use them in place of manure. Get the most out of that manure pile first."

Some of our best authorities on agriculture, men who made a study of the subject, from all angles, claim that live stock is the salvation of Maritime agriculture. Why? Because there is always something to return to the soil in return for the drafts growing crops have made on the plant foods stored in the soil. Help repay these drafts by conserving all the manure, liquid and solid, made on your farm.

MILK VEINS

Hoard's Dairyman says:

In estimating the capacity of a dairy cow, milk veins have always been given considerable attention. It is through them that the blood from the udder is returning to the heart. If the veins are large and tortuous it is believed that a large amount of blood is passing through them and this indicates that the udder is well supplied with blood. It is from the blood that milk is elaborated, and it follows that when the udder is well supplied with material from which milk is made that the cow will be a good producer. It may be said that most of our good cows have well developed milk veins, and they are so common with cows of large production that we admire a well veined animal.

"A few years ago Dr. King of Maine called attention to the fact that the size of the milk veins, as determined from external appearance did not indicate their blood carrying capacity. The walls of the veins, he held, may be thick and the openings through which the blood flows small. Further, the flow of blood is more rapid in some animals than in others.

"There has been little scientific study of the milk veins in order to determine how much their size indicates capacity. Professor R. R. Graves of Oregon Experiment Station has undertaken to find out just what dependence can be put upon the milk veins in judging a dairy cow. He tied off the milk veins of a pure-bred Ayrshire cow so that no blood could pass through those we ordinarily see extending forward from the udder. No ill-effects came to the cow and there was no decrease in the flow of milk of this animal. His work has not been carried far enough to warrant any conclusions, but it does indicate that perhaps we have laid too much stress upon the size of milk veins as an indication of dairy capacity.

'This work of Professor Graves suggests to us the splendid opportunity for a physiologist to study the factors that control milk production and to give us some definite infromation, if possible, upon estimating the cow's dairy capacity by external indications.

THE BEST IS THE CHEAPEST

While in conversation with a breeder of pure bred poultry a day or two ago, he remraked that last season he advertised eggs for sale from two pens of the same breed. Eggs from Pen No. 1 were quoted at $3.00 per fifteen and from Pen No. 2 at $2.00 per fifteen. During the season he sold twenty settings and invariably the request was for eggs from Pen No. 1. This is ample proof that our poultrymen are beginning to realize that the best is none too good.

A breeder of pure bred cattle told us not long ago that he had recently sold six young bulls. These bulls were thrifty youngsters, every one of them. All by the same sire, but out of different dams. The prices quoted were guaged on the producing qualities of the dams. While the cheapest bull looked just as well as the highest priced bull, the former was the last one sold, as invariably, regardless of price, the buyers purchased the bull whose dam had the best producing record.

This is another sure sign the trend is in the right direction. It shows that our farmers are more than ever getting away from the idea of buying on pedigree only. They want pedigree and production combined and do not purpose to allow the question of a few extra dollars to interfere.

When it comes to the paying of prices for first class blooded live stock to improve our herds, or the best seed grain we can get to sow our fields with, the most of us are governed by traditions and mere notions as to values and not sound reasons. At an Iowa convention the question was asked: "What can we afford to pay for good seed corn?" One man present said: "Fifteen dollars a bushel if you can't get it for any less." That would be about 50 cents a quart, or $3.00 an acre. Well, does anybody think he would not be pretty certain to lose more than three dollars an acre if he planted poor seed? Poor seed is fearfully expensive at any price and good, viable seed is always the cheapest at any price if you are going to plant corn at all.

What holds good in regard to the value of good seed corn is also appreciable to all other classes of seed grain, clover, grasses and vegetable seeds.

The introduction of pure-bred bulls from high record stock into any community is sure to increase the average production very markedly in a very short time. This can be brought about by the Agricultural Societies and Live Stock Associations. A community should strive to breed the same kind of cattle so that good bulls can be exchanged and not allowed to be butchered or leave the community.

* * *

Have your palns made as to just where you are going to plant your different varieties of garden seeds.

* * *

Have you sent for the catalogues of all the seed houses advertised in the columns of The Maritime Farmer? Canada's most reliable seed houses advertise in our columns. It will pay you to send for their catalogues and study them thoroughly, then make up your orders and procure your seed supply before the rush season is on.

* * *

Have you talked with your neighbors about subscribing for The Maritime Farmer? Why not do it now? Make up as large a club of subscribers as you can and send them in. You will thus be doing your neighbors a good turn and we will reward you for your trouble.

A New Kind of School Needed

(Continued from Last Issue.)

How are we to get an education suited to all these functions and activities of the farmer? That he should have such an education will surely be admitted by everyone. Will a bare grounding in the three R's not suffice? Surely not! Can't the "little red school house" of revered memory be modernized to yield the desired return? It is not possible. With all due respect to the zeal and skill of many of the little girls or young women who teach in the country schools of Canada, I am forced to the conviction that they can never under the best circumstances work out a fair solution of the problem of education for country life.

The fact is that the one teacher country school is out of date just as the cradle is out of date for harvesting. It may be that for out-of-the-way corners such a school may have to be kept just as the old-fashioned cradle is still required sometimes for securing fence corner harvests. But for most parts of eastern Canada at least, the one-teacher school should be 'scrapped.' That is what is done with defunct machinery in any common-sense business now-a-days. It 'scraps' the out-worn.

No, the kind of education needed to make rural Canada great and contented and prosperous, will never be forthcoming from one-teacher country schools. We must consolidate. Country people must co-operate in education. The unit of administration of country schools must be enlarged. Sectionalism must be broken down. We must grow bigger people and people cannot be bigger than their schools. The average country school cannot produce anything bigger than itself and it is very small. We need consolidated schools that can take pupils into high school work. In other words country people's high schools.

Colsolidation and Country People's High Schools

By "country people's high school" is not meant a town high school such as we have them now, translated into the country, carrying on its university preparatory and professionalizing work. There will always be need for these, I presume, but what is needed is a school of secondary grade that will bring high schooling within the reach of every boy and girl in the remotest parts of the country; uniting its organization and instruction to the actual needs of the country, not to the supposed needs of a few who may or may not go on to college and life-work in the town; opening its doors in the winter months to all and sundry; keeping boys and girls at school until they are 17 or 18 years old; bringing older people in for short courses; acting as a community centre for all country organizations, farmer's institutes, women's institutes, co-operative associations, debating societies, creating a new spirit and developing a country people of enlarged visions of the value of an education that serves their needs.

It will be in such schools and in such schools only that we will be able to secure the six-fold educational need of the Canadian farmer, as trained Laborer, Agriculturist, Mechanic, Scientist, Business Man and Citizen.

Possibilities of the Sussex Agricultural School

And what an opportunity you have right here in Sussex in this fine new Agricultural School in which we are meeting! It shouldn't be difficult to adjust the uses of this school in the directions indicated! This school should have a great influence in this province for a new kind of educational leadership. Far-reaching betterments may be looked for from it!

Five Agencies for Improvement

And how are these things to be secured? Ah! there's the rub! It's easy to demonstrate the need. Everybody sees it. Everybody acknowledges it. But what's to be done about it?

According to my view of the matter there are five chief lines of attack, or five agencies to be set into action. Let us set these before you briefly. Each might be the subject for a separate address but a brief outline will suffice now.

The Teacher Missionary

First—We must work with the tools that are at our hand. We must use the schools and the teachers that we have now for securing the "new idea" and the "new desire," without which the end cannot be attained. "Without a vision, the people perish." In this case they do not perish, but they cease to grow, which is a phase of perishing.

You, as teachers of Nature Study and Agriculture, must go out amongst the country people of the Province of New Brunswick with a missionary's message, you must carry a new gospel of education to your people. By the better teaching and the better matter of instruction that you give to the children you will reveal a new purpose in education. You will lead the people to see a new school possible in their old one. You will make them desirous of more of the good kind of thing their children are receiving. For that you will make them willing to tax themselves more or to urge their representatives in the legislature to vote more money. Out of the old will arise the new. The one teacher school of the pioneer phase of agriculture will be replaced by the modern school founded in a spirit of co-operation.

The Universities' Responsibilities to Country Life

Second.—We need a new kind of direction from our universities. A university as I understand the term is an agency of instruction in universal knowledge. In reality they are not so, at least in Canada so far as I know them. Most of them shut their doors against a large part of the clientele they are supposed to serve. At least the doors of entrances are so narrow and so difficult to approach that few reach them. The entrant must come to them specially moulded to fit the door. Through special subjects of study, which have been used for a few hundred years and which therefore must be still necessary, the candidates must be prepared, or they cannot be fit for further instruction in the higher seat of learning.

And what has this to do with better education for country life? The university has nothing to do with country life. None of its graduates live in the country! It recognizes no direct service to the country! Farmers surely can't be affected by what the university requires of its candidates! It has nothing to do with them!

The university affects the situation in this way. Hitherto and largely now, our system of primary and secondary education is organized on the supposition that everybody may go to the university. The teachers have been nurtured in this working principle. They perpetuate the supposition and put it into practice. They teach to pass pupils through examinations into the high schools and the high schools look upon every pupil who enters its doors as a possible candidate for a higher examination which is shaped in most provinces, though not so much in New Brunswick, I am told, by the narrow university requirements.

Don't you see then that the University hinders the admission of new subjects just as rich in culture-value, too, as Latin or Greek or French or German or some of the mathematics required—back in the country school? It does it not only in a physical sense, but in a hypnotic manner also. Because the university requires such and such, the ordinary school man and the ordinary ratepayer assumes that the requirment must be fair and right. And because there is no popular demand for reform, the university remains fixed in its old-fashioned system, and teachers go on in their old-fashioned ways too.

There are good signs, however, of a change. Many of the American universities have broadened out greatly. This is true particularly in the central west. Chicago University for example accepts into its classes practically any pupil who has completed four years of satisfactory work in a good high school. Out of 15 credits required (a credit is a subject taken for an hour a day for one year) the only obligatory subject is English. For most of the credits, the widest cohice is allowed including such things as Domestic Science, Music, Agriculture, Spanish, etc. In several other American universities the obligatory subjects are Mathematics and English. I believe that in one at least of our own Western universities, this modern principle is to be recognized in part. So we in the East may hope.

In visiting a high school—a real country people's high school such as I described previously, in a little country village in the State of Minesota two years ago, I was surprised to find that some of the pupils who looked forward to entrance into their great state university were not required to take Latin but had such a subject as agriculture accepted as a credit instead. I was surprised because I had never heard of anything like that in Canada. So I asked the principal how it was. He wasnt' ignorant of our needs for he was Canadian born. His answer revealed a not uncommon wrong-end foremost university attitude. He said: "Oh! we own the university in this state; it doesnt' own us!"

When will our universities get the notion that boys and girls are not born and reared and sent to school in order that they may "go to the university"? And when will they so adjust their entrance requirements that the urgent needs of 95% of those who attend common schools may be readily arranged for? It's a far cry from the country school to the university; it is farther from the educational needs of country life to the educational processes of our universities.

Modern Methods from Departments of Education

Third.—We need constructive legislation and modern methods of propoganda and leadership from our provincial Departments of Education. The day is past when a modern government can fulfil all its duties to those governed by simply passing laws and formulating regulations. It has to follow the lead of good business corporations and take its patrons into its confidence. It must find means of letting everyone know what it is thinking about and what it wants them to do. It has to take on a personality and cease being a mere bureau.

There is nothing in the field of education more needed than education about education. The hopes for satisfactory progress rests on the educated intelligence of the mass of school supporters. There is a great field in this for Departments of Education.

We have some fine examples of this in several provinces. Mr. Steeves here has his personal conferences and his circular of instructions; Manitoba has its travelling advocates of consolidation; Saskatchewan has its splendid "Public Service" review in which the activities of all branches of the government are set forth and put into the hands of everyone who is interested in the government of his own province.

This attitude towards those who are served and these, or better, means of enlightenment are due from our Departments of Education in order to make the best progress.

Women's Activities In Education Needed

Fourth. One of the best assurances of better country schools for the days to come lies in the splendid development of women's activities in the Women's Institutes of Canada. In many places they have already given their practical attention to the concerns of the schools and the schools have greatly benefitted. When the war is over it will be found that their power has increased wonderfully. In the patroitic and Red Cross work, they are strengthening themselves in co-operative and unselfish services. With the needs of the schools and of rural education in general made plain to them, what may not be hoped for?

Our country women should be encouraged to take a place with men in managing our schools. In many respects they are better equipped for this than men. They are the natural home-helpers to children in school work. They are instructively more concerned in the affairs of the school. And they are better educated than men! All over Eastern Canada at least, it will be found that our girls are getting more schooling than our boys. The senior classes in the country schools and the high school classes in country towns and villages show the girls greatly outnumbering the boys. In the school in which I teach the proportion is about five girls to two boys in the first year classes. If trained intelligence is needed for qualification in trusteeship, surely our omen should have a share in managing our schools! If our men have failed to keep pace with the times, perhaps the women could speed them up a bit!

A Federal Bureau of Education Needed

Fifth—We need the force of the federal government in the undertaking. You say the Dominion Government has no given place or rights in the field of education. Well, if it hasn't let us give it one. Look at the Bureau of Education in the United States! It has done a magnificent work without interfering with the rights of states. We could do the same surely. There is a great cause to serve by a Dominion Bureau of Education. Think how our provincialism in education might be broken down. Imagine the good that could come from co-operation. Could anyone measure the possible growth of national spirit that might be fostered?

Undoubtedly much of the advance in education in the United States has resulted from the services of its Bureau. In Canada, there has been good too from the operation of the Agricultural Instruction Act in the field of agricultural education; all the provinces are unitedly going forward. But the field should be widened. Education is larger than Agriculture. We need the force and asistance of the Dominion Government to make the campaign for better education for country life effective. It is a national problem. There should be a national agency concerned in its solution.

Missionary teachers, redirected universities, modernized Departments of Education, women trustees, a Dominion Bureau of Education! Will these come to be? Surely. It will be a slow process but they will come. When they are commonly felt as human needs, they will come. In the meantime we must be patient—but not

(Continued on Page 332)

55 First Prizes From One Garden

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Results Obtained at the Dominion Entomological Laboratory During 1915

(Continued from Page 311)

In this lot No. 13 had trouble with his pump and had low pressure throughout; No. 14 was three days late with each spray and could not possibly get good results; No. 16 was delayed by trouble with pump; No. 19 had trouble with outfit, and was way too late with the third spray. In the list the men who sprayed five times got the highest percentage No. 1 and 2; those that sprayed four times, once before and three times after the blossoms came next, followed by those that sprayed twice before and twice after the blossoms, then come the orchards sprayed three times in a long even row, then the two sprayed twice, then one sprayed once, then one not sprayed, then one sprayed twice—the last spray way too late, and finishes with an unsprayed lot.

The lot which packed out 68 per cent No 1 and 2 cost a trifle less than 15 cents per barrel to spray the five times or at the rate of $15.00 per 100 barrels. It sold through the company at the rate of $208 per 100 barrels, the lot which came highest of the unsprayed lots coming from the field next to the best lot and grown on isolated trees, while the best lot was from a thick, closely planted orchard, and sold through the company at the rate of $143 per 100 barrels. Fifteen dollars per 100 barrels would have given that man as clean a crop as his neighbors and an additional return of $65.00 per 100 barrels, which after deducting the cost of spraying would come to a clean profit of $50.00 per 100 barrels, which the man lost through not spraying; and that unsprayed lot I may say was the very best unsprayed lot of Gravensteins I have seen this year.

In this comparison we have not considered the fact that the man who sprayed caused 80 per cent more apples to set on acocunt of insect control, and it is hard to estimate how many more on account of blackspot control. Neither have we considered that he caused the foliage to remain on his trees for at least a month longer this fall, making the fruit buds strong and full, so insuring a good, vigorous bloom for next spring. These things cannot be reckoned in accurately, but they all go as additoinal profits from spraying.

Now there is spraying and spraying—some good, some no good. No. 14 on the list packed out 26 per cent No. 1 and 2. He sprayed rather carelessly and was three days late with each spray. His appies sold at the rate of $151 per 100 barrels; the three sprays which he applied cost him at least $9.00 per 100 barrels, which deducted from $151 leaves $142, or $1 less than the best unsprayed lot. We can readily see from this sheet that good spraying gives big returns, but there is no profit in half spraying an orchard. Too many people are afraid of wasting spray; there are very few orchards in this Valley where enough is used. We can dilute it more and use more with profit. I must tell you of one of the men who experimented for us last season. We wanted him to test the drive nozzle. He said he was afraid it would waste the spray, so I agreed to give him ten pounds of arsenate of lime to make up for the waste from using the drive nozzle. On one side of the orchard where he used the drive nozzle he got 9.8 per cent spotted Gravensteins, and on the same side where he used the old mist nozzle he got 22.65 per cent spotted Gravensteins. On the other side of his orchard he got 19.7 per cent spotted with the drive nozzle, and 57.2 per cent spotted with the mist nozzle, getting in one case 12.85 per cent more clean apples, and in the other way 37.5 per cent more clean apples where he used the drive nozzle and apparently wasted a little spray. A man should cut out all miserly feelings and make himself act as much as possible like a philanthropist or a spendthrift when he is spraying his trees, if he wants good results.

Conclusion

In talking over the outlook for the apple business with different people, and reading what I could with a bearing on the future, I have found several interesting bits of information. Prof. Bunting, of McDonald College tells me that he has investigated the matter and finds that there are fewer apple trees east of the Mississippi or in Eastern America today than there were twenty years ago. Mr. F. S. Walsh, Agriculturist to the New York Central Railway, whose business it is to know such things for his employers, tells me that there are fewer apple trees in New York State today than in 1891. Several factors are the cause of this falling off in orchard in eastern America, the most important being the San Jose Scale, which has killed thousands of acres of apple and peach in Illinois, Indiana, Ohio, Virginia, New York, Connecticut and Massachusetts. In addition to killing off the uncared for orchards, the San Jose Scale is making it almost impossible to grow a young orchard in infested districts as the profits from apples in the Middle States are not large enough to justify the extra cost necessary. Then the fact that peaches are a much more profitable crop than apples in some sections has caused a portion of the reduction. Lack of profit and general neglect have also been the cause of a large amount of the decrease in Massachusetts, Maine, New Hampshire, etc.

Now, with all due credit to the system of buying co-operatively which has saved the grower anywhere from 5 to 20 per cent on his supplies, and to the co-operative marketing system which has been the cause of opening new markets, keeping down freight rates, standardizing the pack and altogether increasing the return not only to its own numbers but to the general public as well, we can also increase our profits enormously by better work in our own orchards. Last year I wrote up two orchards, one sprayed and the other unsprayed, taking the 1911 crop as a 100 per ecnt full crop

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during the three years following the man who did not spray averaged 30.6 per cent of his 1911 crop of Nonpariels, while the man who sprayed averaged 111.8 per cent of his 1911 crop of the same variety. The man who did not spray for the same three years averaged 18.7 per cent of his 1911 crop of Gravensteins, while the man who sprayed averaged 116 per cent of his 1911 crop of the same variety; or the second man's crop of Nonpariels was increased by 265 per cent and his crop of Gravensteins increased by 520 per cent, over what it would have been if he had not sprayed. We have this year the best sprayed lot of Gravensteins in the Round Hill warehouse, averaging $2.08 per barrel, while the best unsprayed lot averaged $1.43 per barrel, and spraying our figures have shown, increases the quantity of fruit a whole lot more than it increases the quality.

We are now at probably the most trying time in the history of the apple industry in Nova Scotia, and still we are selling apples at a profit. The competitor of Nova Scotia cannot continue selling apples in competition with us at less than cost, and it cannot be many years until we are in a much better position in regard to markets than we are now.

Last year the United Fruit Companies offered to place at our disposal one page of the "Co-operative News" which is sent to about 60 per cent of the fruit growers of the Valley. The Dominion Entomoolgist, Dr. Hewitt, welcomed this opportunity to place the latest and best knowledge of spraying before those most interested at the earliest possible moment, and in addition to our own articles we have been running a series of articles on spraying from Prof. Brittain, Prof. Caesar, C. A. Good, M. E. Davis and others, all written especially to suit Nova Scotia conditions and during the coming year the aim of our Laboratory staff will be to help in advising the Nova Scotia grower by this and other means how to produce the best fruit in the most economical manner, and so to win out in competition with other countries in the world's markets.

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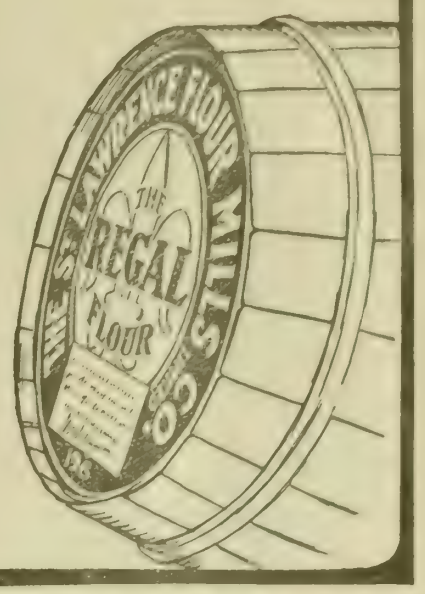

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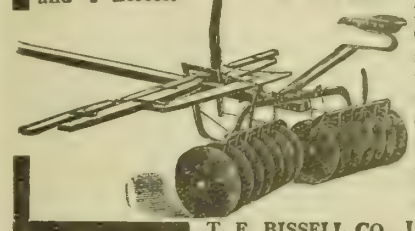

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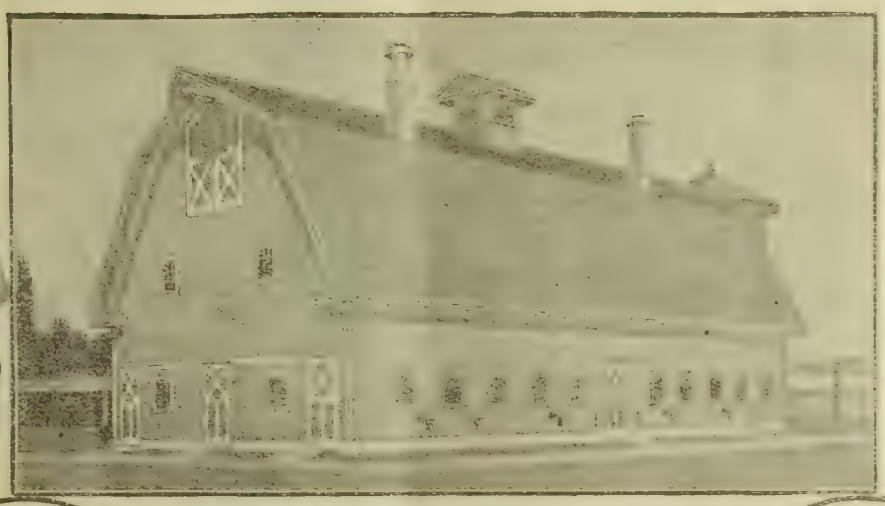

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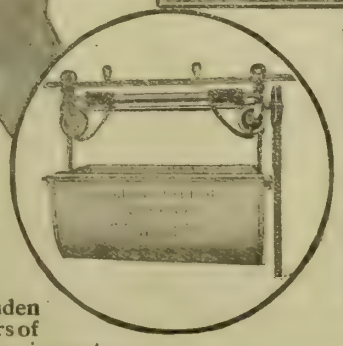

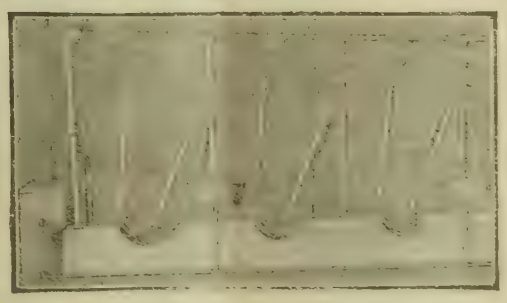

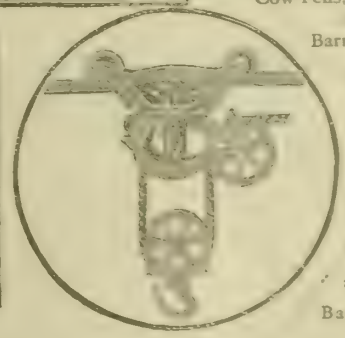

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Pruning the Tree for best Results.

W. J. Green, chief horticulturist of the Ohio Agricultural Experiment Station, addressed a recent meeting of horticulturists on the subject of the "Rejvenation of old Apple Orchards" and in the course of his address he said that the first point to decide is whether or not the orchard is worthy of rejuvenation. A large proportion of the old and neglected orchards will not pay for the labor and expense that will be necessary to bring them to abundant fruitfulness, because the varieties are not such as will sell at fair prices on the market.

About the first step in the rejuvenation of an apple orchard is the pruning. The ordinary instruction is that the top and centre of the tree must be opened up so that the sunlight can get in. In most cases this is all wrong. When the average tree is bearing its load of fruit, its weight causes the branches to droop and spread apart so that all the light and heat of the sun that is necessary can get into the centre of the tree. If the tree is opened up so that the sun's rays are unobstructed when the tree is bare of fruit, the exposed branches are liable to sunscald, leading to their death.

O course dead and dying branches must be removed. Allowing them to remain is dangerous to the life, the health and the fruitfulness of the tree. But aside from these, it is seldom desirable to remove large branches. A general "dehorning" of the trees, which has been frequently recommended, is entirely unnecessary and should not be tolerated. When a large branch is cut from a tree, one or more water spouts usually start from near the end of the stub. These seldom amount to much as bearing wood and may soon die. In the latter event or in case none start, the stub becomes the same as dead wood and is a menace to the good health of the tree. If for any good reason it appears necessary to remove a large living branch the cut should be made just above another branch. The cut should be at a considerable slant from the horizontal with the point of the cut on the same side as the remaining branch, and the cut surface should be dressed with paint.

Aside from the above all necessary pruning may usually be readily done with the jackknife. It should consist largely in thinning out the fruit bearing twigs at the ends of the branches. Any water spouts which may appear should be removed before they reach much size. But few grow if no large branches are taken off.

Wanted—Potato Seed

Potatoes have been grown so long from cuttings that they are getting out of the habit of producing seed. Seed for breeding purposes is in demand and worth six dollars a thimbleful—when the thimbleful can be secured. Edward F. Gigelow, writing in The Guide to Nature (Sound Beach, Conn., January) tells an amusing tale of his efforts to obtain the seed of this exceedingly common food product. He has been told everywhere that it can be had "by the bushel," but he rarely finds it. In Maine he is informed that it is plentiful in Ohio, and in Indiana they refer him to Michigan. Experts tell the truth. Mr. Burbank's explanation is given above. William Stuart, horticulturist of the United States Bureau of Plant Industry, writes that the reason more seed-balls are not developed is that most potato-plants do not produce enough pollen capable of germination. Such pollen develops best in northern climes, and the seed-balls of potatoes are thus seen most frequently in Maine, northern Michigan and Winconsin. Writes Mr. Bigelow:

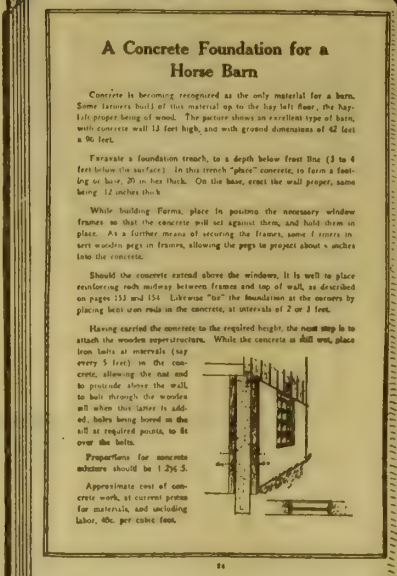
"Thirteen years ago I originated the annual summer school of nature-study at the Connecticut Agricultural College, Storrs, Connecticut, and was the director of the first session. One of the members of the staff at that session was Professor Gully, the horticulturist of the college. This expert in garden products made one day an astonishing statement that I thought was intended to be oratorical rather than literally financial. When discoursing in regard to the fruiting-berries of the common potato, he exclaimed: "All these berries have disappeared from the State. I will give twenty-five dollars for one found within Connecticut.'

"No more of that lesson that day for me. I did not expect to receive twenty-five dollars, but I wanted the satisfaction of proving that the professor was in error. Potato-balls? It seemed only yesterday that I saw them lying on the ground by the quart, the peck, the half-bushel! Potato-balls? I remember hurling them from the end of a sharp stick with almost the accuracy of a catapult.

"I slipt out of the class-room and hastened to the nearest potato-patch. Over an acre of ground, up and down between the rows I traveled, but if the prize had been one hundred dollars I should have received it not. No potato balls were there. Still, I was determined to show Professor Gully that he was wrong. When I returned home I hunted in my garden and in the gardens of other people. I haunted potato-fields and searched acres. I invited others into the work. I talked about it from the lecture platform in various parts of the State. At last came a letter and a package. 'Here, Mr. Bigelow,' said the letter, 'are fifty dollars' worth. I found these two hunting over an acre of potato patch, and I send them to you. Collect fifty dollars from the professor. You keep twenty-five. That will be fair to both.' With high anticipations I unwound the fastenings and removed the cover of that box; but how dissimilar to those great, round, smooth, tomato-like forms so familiar to me, just a few days ago, as it seemed, in boyhood's familiarity with the potato-patch! These were vestigial berries no larger than peas! So for thirteen years I have searched in vain to prove that Professor Gully is wrong, but he must still limit that claim to Connecticut, although it would not cost him a for-

Before You Build

WHAT THE FARMER CAN DO WITH CONCRETE



A Concrete Foundation for a Horse Barn

Concrete is becoming recognized as the only material for a barn. Some farmers build of this material up to the hay loft floor, the hay-loft proper being of wood. The picture shows an excellent type of barn, with concrete wall 13 feet high, and with ground dimensions of 62 feet x 96 feet.

Excavate a foundation trench, to a depth below frost line (3 to 4 feet below the surface). In this trench "place" concrete, to form a footing or base, 20 in. hes thick. On the base, erect the wall proper, same being 12 inches thick.

While building Forms, place in position the necessary window frames so that the concrete will set against them, and hold them in place. As a further means of securing the frames, some farmers insert wooden pegs in frames, allowing the pegs to project about 4 inches into the concrete.

Should the concrete extend above the windows, it is well to place reinforcing rods midway between frames and top of wall, as described on pages 153 and 154. Likewise "tie" the foundation at the corners by placing bent iron rods in the concrete, at intervals of 2 or 3 feet.

Having carried the concrete to the required height, the next step is to attach the wooden superstructure. While the concrete is still wet, place iron bolts at intervals (say every 5 feet) in the concrete, allowing the nut end to protrude above the wall, to bolt through the wooden sill when this latter is added, holes being bored in the sill at required points, to fit over the bolts.

Proportions for concrete mixture should be 1-2½-5.

Approximate cost of concrete work, at current prices for materials, and including labor, 40c. per cubic foot.

Concrete is the Best Material for a Horse Barn Foundation

In the first place, concrete foundation walls are cheaper—in first cost—than any other material except wood; and of course farm horses are too valuable for the owner to dream of depending on wood for their protection. As every farmer knows, animals attract lightning—and lightning causes fire. If your barn is entirely of wood, fire will quickly sweep it away, without giving much chance to remove the horses.

Concrete is permanent, sanitary and rat-proof. Concrete wall foundations make a building cool in summer and warm in winter.

Nowadays, the farmer shows his good sense, by being just as thoughtful of the welfare of his animals as he is of his own comfort.

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There are 14 pages of information vital to every farmer who intends to build a silo. 22 pages show what concrete is; how to mix it; the tools needed; what kind of sand, stone and cement are best; how to make forms; how to place concrete; and reinforce it, etc., etc. In fact it tells everything necessary to know about the world's best and most economical building material—*Concrete.*

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PALPITATION
OF THE
HEART.

Sudden fright or emotion may cause a momentary arrest of the heart's action, or some excitement or apprehension may set up a rapid action of the heart thereby causing palpitation.

Palpitation, again, is often the result of digestive disorders arising from the stomach, or may be the result of over indulgence of tobacco or alcoholic drinks.

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you must consider the working points. So drop us a card and learn why it is so popular.

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ADVERTISE IN THE MARITIME FARMER TO GET RESULTS.

tune should he extend to the United States in general.

"From the lecture platform in Teachers' Institutes in Ohio, Indiana, and Pennsylvania I have told the story of that startling announcement, and in most place I have offered a year's subscription to this magazine for a box of well-developed specimens. Last August I made the offer before more than two thousand teachers of Allegheny County at Pittsburg, Pa., and again in one of the county districts of southern Indiana. The announcement was received with general surprise and the remark: "We can send them to you by the bushel. We will bankrupt you on subscriptions." But of the thousands of teachers that promised to search the fields only about a dozen have responded, and no package contained more than eight or ten balls. Nearly all have been vestigal. In the thirteen years not more than thirty large, smooth, round, perfect specimens have reached me. As a result of my efforts during the past summer, I have obtained at a cost of six dollars less than a thimbleful of the seed.

"Now the question is, "What is going to happen to the potato-crop when no more seed is obtainable?' Most readers know that what we call the planting of seed-potatoes is the planting of pieces of potato to raise a new crop; it is really but a sort of cutting as one might cut twigs of willow and set them in the ground to produce new trees. Like grafting, it produces its own kind.

"But when we plant potato-seed it is like planting apple-seeds, for we do not know what will happen. The seeds seem to become insane and try to produce a little of everything. Fortunate is the experimenter that finds in the varied potato-seedlings some particular form that may be better than the original. I long ago gave up all attempt to attain fame and fortune by originating an early rose or something equally epoch-making, but I find it interesting to experiment with the seeds and I get kaleidoscopic effects that most conspicuously manifest themselves about the second or third year.

"These investigations have led to efforts to ascertain where in the United States the seed may yet be obtained. . . . . A number of correspondents have told me that Luther Burbank, of Santa Rosa, Cal., 'has planty.' Mr. Burbank throws the will-o'-the-wisp clear across the continent of Maine, and writes:

"The reason for the scarcity of potato-seed is that the potatoes have been grown from cuttings so long that it has given up its habit of going to seed.

"It is somewhat difficult to obtain potato-seed, but you can probably obtain it from some of the nurseries or seed-houses in Maine.'. . . .

"Here is what the Department of Agriculture of the State of Maine says:

"'I do not know of any one at present who is experimenting in growing potatoes from seed. The season has been so bad here in southern Maine that I have not seen any mature seed-balls. I have some at home in a little vial, probably several hundred. These are several years old, and I do not know whether they would germinate or not.'. . . . .

"The more extensive the correspondence the more one is inclined to agree with the great Dreer seed-house of Philadelphia when it writes:

"We regret to say that we are unable to furnish you with the potato-balls and do not know any source of supply for seeds.'

"Readers, this is an alarm-cry! Potato-seed is going from this country. All that can be obtained should be put at once into the hands of competent experimenters.

"What are we going to do when the present varieties of potatoes have 'run out,' and no more seed can be obtained?"—Literary Digest.

RENNIES SEEDS

PUREST-CLEANEST
MOST RELIABLE
GET CATALOGUE
AT BEST DEALERS
OR DIRECT
190 McGill St., Montreal, Que.

It's good for little girls, too

Everybody—young and old—loves the rich, delicious flavor of

EDWARDSBURG "Crown Brand" CORN SYRUP

It is a daily treat—the perfect sweet. Just what the children should have on Bread—costs far less than butter or preserves. Delicious with Hot Biscuits, and Batter Cakes. Gives a new delight to Baked Apples, Blanc-Mange and Puddings. Makes the best Candy you ever tasted. 3

"LILY WHITE" is a pure white Corn Syrup, not as pronounced in flavor as "Crown Brand". *Your Grocer has both Brands, in 2, 5, 10 and 20 pound tins—or can easily get them for you.*

The Canada Starch Co. Limited, Montreal

Remember the day you sprinkled the Potatoes?

You used a sprinkling can and barrel. About half-way through the rain came up, washed off the solution and made it necessary for you to do the work all over again. The chances are if you had had a

Spramotor

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you would have been able to do the spraying soon enough for the plants to get the benefit. With a Spramotor remember, you can spray an acre of potatoes thoroughly in 15 minutes. It sprays four rows at once—three nozzles to a row—and is adjustable up to 40 ins. It has a capacity of 12 nozzles with a guaranteed pressure of 125 lbs. at every one; all working. The fact that the Spramotor has over 100 Gold Medals and First Awards to its credit, shows that it is able to do the work the way you want it done. The cost too is lower than you imagine—as low as $6 up to $400. Booklet on request. Made in Canada. No duty to pay.

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TRY .AN .AD. .IN .THE .MARITIME .FARMER—IT .PAYS

DAIRYING.

The Use of Starters.

It is not very long since the modern method of making butter and cheese originated. Previous to that, and in some cases at the present time, the resultant product was not all that could be desired. Merchants complained that there was lack of uniformity in the quality, with the result that they had gerat difficulty in giving satisfaction to their customers. Now, however, with the use of "starter," the butter-maker and the cheesemaker may control the ripening of the cream or the development of acidity in the cheesemaking process to such an extent that the production of a uniform article can be accomplished. In fact, success in butter and cheesemaking is only possible where the ripening process or development of acidity is properly controlled.

The Theory of Ripening

It is well known that milk or cream which is left exposed to the air will become sour and curdle. This acidity is brought about by the activity of the lactic acid bacteria which live in the milk, feed on the milk sugar or lactose, and ultimately change it into lactic acid. The lactic acid produced precipitates the casein, causing the milk to thicken or curdle. This development of lactic acid in the milk or cream is called the ripening process. These bacteria, being living things, are affected by variations of temperature. Towards freezing point they cease to be active factors, and with high temperatures they may be killed off. Between these two extremes at which they develop and multiply at a great rate, so that their activity would be greatest at about 85 degrees F. The golden rule to remember is that to hasten ripening one must raise the temperature as near the optimum as possible, while to retard it the milk must be cooled down to 50 degrees F., or in some cases less. Close attention to the temperature of the milk and cream during the ripening process is, then, imperative if a superior article is to be obtained.

But What is a Starter?

A starter is really a culture of the bacteria which change the sugar of milk (lactose) into lactic acid. These occur in sour milk, buttermilk, sour whey, cheese, etc., and the first three of these may be used in some cases for this purpose, provided they are net tainted in any way with other injurious bacteria. Commercial starters are now on the market, and can be had in either liquid or powder form; the former, however, is the one chiefly used in this country. These commercial starters are, or should be, pure cultures of the lactic acid bacteria.

How a Pure Culture is Made.

Take three tubes of nutrient gelatine, and keep at a temperature of 100 deg. F. to keep the gelatine liquid. Make a loop on the end of a platinum wire, and place a loopful of sour milk, wihch has a clean, sharp, acid flavor, in No. 1 tube, and stir after adding. Transfer a loopful of inoculated gelatine from No. 1 to No. 2, stir again, and do likewise from No. 2 to 3. The idea is to get the bacteria thinned out or attenuated in Nos. 2 and 3 tubes. The contents of Nos. 2 and 3 are poured into sterilized plates with covers on, and sperad evenly over the bottom. This is called "laying the plates," or practically "seeding" 'them. Each or at least several of these bacteria flourish on the nutrient gelatine, and by multiplication form colonies after their own particular kind, provided the temperature has been somewhere about 70 degrees F. After examining under a microscope, one of these colonies is selected and cultivated further on gelatine, agar and in sterile milk, to make sure that none other than the lactic acid forming bacteria are present. The required organisms having been isolated, is propagated from day to day in a suitable medium, like separated milk, which has been previously rendered sterile by heating, and this gives a pure culture.

Preparation of Starter

Take half a gallon of separated milk in a clean enamel pail. Heat to 170 deg. F., and then cool down to 84 deg. F. Into this, after shaking the bottle containing pure culture pour contents of bottle, and cover the pail with a muslin cloth. Set in a room which doesn't fall below 65 deg. F. for 24 hours. The milk should then be thick an dsour. Make a second or sub-culture from this by taking some more separated milk, which has been rendered. sterile, and after skimming off the top layer take, say, a pint from the centre of the first culture in first pail, and strain into it. Set as before. A third cultivation should be made, which will generally be quite satisfactory. Each day about a pint should be reserved for setting the culture to make the following day's starter. A good starter will contain .75 to .85 per cent. of latcic acid, and in order to get this, one needs to attend to the time of setting, the temperature of the milk to be inoculated, the amount of starter used, and the temperature of the dairy. Where a night temperature of 70 deg. F. can be looked for, good results can be obtained, by adding ½ to ¾ pint of previous culture to each gallon of scalded milk, and setting it at 4 to 5 p.m. With the dairy at a lower temperature, it must be set earlier. About mid-day answers well in some dairies.

Preparation of Home-Made Starters

Take two enamelled pails. In one pour newly separated or skimmed milk. Set in a warm place for twenty-four hours, when the milk will be sour and thick. Skim off surface, and break up the centre of this soured milk, then take about half a pint and add to milk in second pail, which has been previously scalded and subsequently cooled to about 65 deg. F. Make sub-cultures from this as mentioned above, when the third one should be a fairly pure culture. If the surface or any part of the starter becomes discolored, this part should be rejected, and only the pure white portion used. When the starter becomes weak, and does not sour the milk sufficiently, either more starter should be used, or a fresh, pure culture should be secured. It is advisable to prepare as much starter as will equal about one per cent of the milk to be inoculated. After setting the culture for next day, it should be stirred occasionally in the evening. "The preparation of home-made starters does exert a purifying influence on the bacterial content of starter, and results in the elimination of bacteria, which are unnecessary, if not harmful, to the production of a first-rate article."

Character of Bacteria Used in Starter.

They should resemble those found in ripened cream or in good cheeses, and they should by no means have a clean, sharp, acid flaovr, and when added to milk or cream should be capable of eclipsing, to a large extent, the development of obnoxious bacteria. They should neither liquify gelatine nor produce spores, and when examined under the microscope should occur in pairs or figure eight as short bacteria with rounded ends.

Wise Dairymen Frequently Use Tuberculin Test.

Owners of dairy herds should not wait for authorities to compel them to tuberculin test their herds. The prudent and sagacious man keeps his herd free from tuberculosis. It is to his advantage to do so. It is his loss when he does not, writes ex-Gov. W. D. Hoard of Wisconsin.

A community has a right to demand clean, wholesome dairy products. It cannot force a person to tuberculin test his cows, but it can keep him from marketing his products unless they come fro ma herd free from disease. It is quite true that reforms are apt to be carried too far and to contain many things which are impractical. It is not possible for a province of a city to send out men to test cows and if reactors are found eliminate them from the herd and in this way clean up the diseased animals, unless they have the co-operation of the owners to follow out certain principles necessary to free a herd from tuberculosis.

Perhaps it would be well for us to discuss a few things that should be done and to indicate the limitation of the tuberculin test and the nature of tuberculosis. In the first place, tuberculosis is a germ disease. An animal cannot develop it unless it comes in contact with the germ. A herd may

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EMPIRE Mechanical Milkers: Remove the grind of daily milking—make their owners independent of hired help—induce the cows to let down more milk—protect the milk from dirt and germs.

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BALTIC Separators: Are high-class small machines for the man with a few cows. They sell at from $15. to $45.

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MILK YOUR COWS
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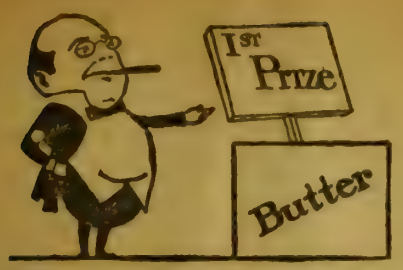

Prize butter is made with Windsor Dairy Salt

(Made in Canada) 156

be kept in dark, close, foul stables but will not develop tuberculosis unless the germ is present. Such an environment, however, weakens an animal and creates a condition which makes it easier for the germ to develop and, as the saying goes, for the herd to catch tuberculosis. It is for this reason that we urge well lighted and well ventilated stables. Light destroys germs, and fresh air is necessary for healthy cattle.

The tuberculin test is the only diagnostic agent for tuberculosis. It is impossible for a person to eliminate tuberculosis from a herd by physical examination. There are no symptoms which alone characterize this disease. Because an animal coughs is no sign that it has tuberculosis, nor because it is thin in flesh does it follow that the disease is present. On the contrary, an animal may be fat and have tuberculosis. It is unfortunate that tuberculin does not point out the disease during the incubating stages or show animals that are infected. It can be said that when an animal is properly tested with tuberculin and a characteristic rise and fall in temperature follows, there is little question but that the disease is present. Then, too, an animal may be so far advanced with the disease that she will not respond to the tuberculin test. In such cases a physical examination will usually determine the presence of the disease.

The use of tuberculin in many instances has been misunderstood. It is thought by not a few that if a herd is tuberculin tested and the reactors eliminated, that the herd is clean of disease. This is not the case. There may be several animals in the herd that have been exposed but do not react, for the disease in the incubating stage is not revealed by the tuberculin test. When reactors are found in the herd a retest should be made in six months. It is held by many that when 50 per cent of a herd responds to the tuberculin test it is safe to consider all the herd tubercular, for sooner or later the other 50 per cent are almost certain to develop the disease.

In such instances as this, and where it is desirable to raise the calves of the cows reacting, it is well to follow the Bang System. This system provides for the separation of the young calves and does not permit them to drink any of their mother's milk unless it is pasteurized; that is, heated to a temperature of 150 degrees F. and kept there for twenty or thirty minutes. Care should always be taken to prevent the carrying of the infection from the mothers to the calves.

The question is frequently raised as to whether tuberculin injures a cow. It may be said that the cows on our own farm have been tested for fifteen or more years. Some of the cows at the present time are fifteen years old. They have received tuberculin for thirteen or fourteen years and are still in good health. In all our experience we have never seen any injurious results following the use of tuberculin. Doses forty times larger than is necessary for testing purposes have been given cows before any symptoms of sickness followed. It is understanding these few principles thoroughly and following them out that will in time rid a herd of tuberculosis.—Hoard's Dairyman.

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Why the other fellow gets five cents more for his EGGS than you do?

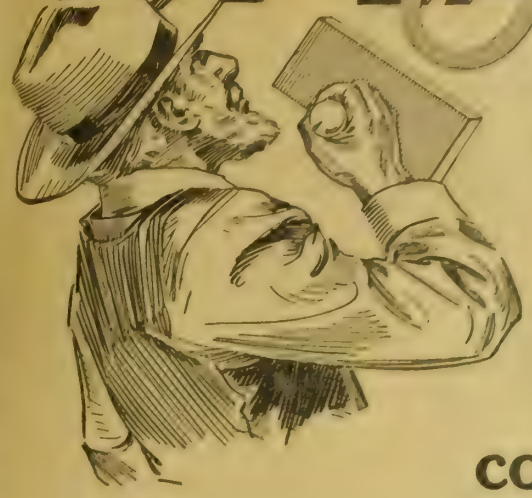
He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
St. John, N. B.

for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

DE LAVAL



O.K'd by nearly two million cow owners

MORE De Lavals are being sold than all other makes combined—nearly 2,000,000 are now in use. Year by year an ever increasing proportion of farm separator buyers reach the conclusion that the De Laval is the only cream separator they can afford to buy or use.

In fact, about the only excuse ever offered for buying any other separator nowadays is that its first cost is a little less than the De Lavals.

But they soon find out that the last cost of a cream separator is what really counts, and when they realize that the De Laval gives the most and best service for the money they buy a De Laval.

Over 40,000 users of inferior machines discarded them for De Lavals during the past year in the United States and Canada alone.

Better be right in the first place and start with a De Laval.

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POULTRY SUPPLIES.

LIVE STOCK.

Ordinary Steer Not Profitable Animal to Feed.

The wisdom of growing baby beef, and the unwisdom of trying to carry steers too long and then sell them without being finished were points emphasized before a large gathering of visiting breeders and cattlemen, at the Ottawa Winter Fair recently, by Prof. George E. Day, of the Ontario Agricultural College, Guelph.

Prof. Day declared that it would cost 11 cents a pound to put flesh on a steer bought to feed and properly finish him for market, charging up the various items at current market prices. Yet beef was selling at two or three cents a pound under that amount, and the result was that amount of loss. The loss would have to be made up, he went on, dealing with this class of feeders, be increasing the weight and economizing on feed.

Continuing, he said that the market for beef was extremely unsatisfactory. The farmer was taking more or less of a gambler's chance, besides, for he was speculatinng on what the market would be in three or four years. The price of feeders must come down, or there must be an increase in the price of fattened cattle, or a more stable market for them. If not, beef farmers must not expect to get satisfactory results.

Prof. Day would not say that the steer bought for feed was not a profitable animal; all knew that he made less labor and expense than the dairy animal, and this was what kept many of the men in the beef business. Some men bought right, and finished right, theerby making a profit, but many did not, the reason being that most men were not the best judges of feeding cattle. Another reason was that many cattle were put on the market in an unfinished condition.

He ofter found people making a comparison between the prices on the American and Canadian markets, but they should not do so, as the corn belt animals were different, and finished differently from Canadian. A visit to the Chicago meat market would impress anybody, he declared, with the degree of finish on the American steers; while the Canadian finished steers, by comparison, looked like just good feeders. Lack of finish was characteristic of Canada. This sounded blue, but nevertheless, he wanted to emphasize the necessity of more farmers finishing their cattle well.

An important point in regard to marketing, made by Prof. Day was that the man who fed the cattle should put them in a car and market them himself, instead of selling them three or four months before, to a buyer who was only concerned in selling them; this was one of the main reasons for the low price.

He belived there was a bright side to the question, however, and higher prices meant more breeders. This could be found in the production of baby beef. The young animal was growing all the time, and, if the market was not good at the moment, he could be held without increasing the cost of care and feed out of proportion to the value of the gain he would make. Not so with the steer bought to feed, however, for to hold him meant small gain at heavy expense.

In this province, said Prof. Day, there was a good opening for the producer of baby beef, in fact, the opportunity was the most promising of any branch of the beef industry. The animals must be bred right, and he believed the time was coming when the feeders of beef steers would also be breeders. The care must be of the very best, and the young animals must not know want from birth to market. The farmer who thought he could not afford to put a little extra feed into his calf would not make good in the beef business.—O. V. T.

Still Singing Their Praises

DODD'S KIDNEY PILLS CURED HIS RHEUMATISM

Mr. D. A. Brotherston Tells How His Rheumatism Disappeared Over a Year Ago and Has Never Come Back.

Victoria Harbor, Ont., Fberuary 21st. (Special).—Cured of rheumatism over a year ago by using Dodd's Kidney Pills, Mr. D. A. Brotherston, a well-known resident of this place, is still singing the praises of the great Canadian kidney remedy.

"I was troubled with rheumatism in my left hand, which would shift to my elbow and then to my shoulder," Mr. Brotherston says. "It was very annoying and painful at times, but I heard of Dodd's Kidney Pills helping others, so I quit the liniment I was using and took six boxes of them. The rheumatism disappeared. That was over a year ago, but it has not returned.

"I know Dodd's Kidney Pills are good for kidney trouble both in my own case and through others who have used them."

Rheumatism is caused by uric acid in the blood. If you cure your kidneys by using Dodd's Kidney Pills they will drain all the uric acid out of the blood and there can be no rheumatism.

Scabby Mouth in Sheep.

There exists some confusion as to the exact nature of the scabby mouths and noses so commonly found in sheep and lambs, often affecting a number of animals at one time, and there is certainly difficulties attending diagnosis even when there is opportunity for personal examination. A postular eruption assuming various forms, called impetigo larvalis, affects the face and lips of sheep, due, it is supposed, to the presence of irritant substances in the animal's fodder, but there is no doubt that the majority of such cases, possibly all of them, are due to parasitic invasion, and are real

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ly a slowly-extending form of mange or scab—Sarcoptic scabies. Writing of this form of scab, Steel ("Diseases of the Sheep") says:—"Youatt mentions, as described under the name 'black muzzle,' an eruption seen both in Great Britain and on the Continent, consisting of pimples and scabs about the nose, sometimes extending to the eyes and ears, encircling the former and covering the latter. It was thought to be 'non-infectious' or not readily communicable, and was found to be readily cured by application of mercurial ointment (one part) diluted with 11 parts of sulphur ointment. Thus Youatt seems to have been acquainted with the disease known in France as noir museau, information concerning the true nature of which has been introduced into this country by Dr. Fleming. Its first indications are found on the upper lips, around the nostrils, rarely on the eyelids, and around the ears. There is intense pruritis, and on examination may be discerned well-defined vesicles with red areola. The animal licks the lips and scratches the diseased parts with the fore and hind limbs. Thus the vesicles become broken, a yellowish discharge escapes and dries to a hard crust." For cases of "scabby mouth" the following treatment has been found successful. It consists of an ointment made by mixing as much finely powdered sulphate of copper (blue stone) with a quantity of lard as it will take up. This is applied to the sore muzzle after breaking down the crusts with the blunt edge of an old knife. It would be well at the same time to give each sufferer a dose of Epsom salts and change the food.—Veteran in English Exchange.

The Nova Scotia "Lumber King" says:

"I consider MINARD'S LINIMENT the best LINIMENT in use.

I got my foot badly jammed lately. I bathed it well with MINARD'S LINIMENT and it was as well as ever next day.

Yours very truly.
T. G. McMULLEN.

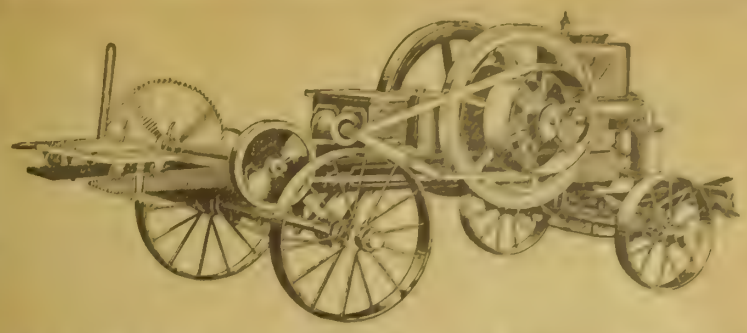
Rheumatism in Swine.

In northern latitudes, rheumatism often occurs among swine, especially during cold, damp weather. Damp, ill-ventilated pens are a common cause, and it may be caused by over-feeding. Piggeries built with stone or concrete walls and floors are generally more dangerous than those built of wood. When such walls are hollow and the floors insulated with a tar layer, they are much safer. The hog becomes very lame and stiff and moves about with difficulty. Sometimes the points becomes swollen and very painful, and the animal becomes practically helpless. In such cases it is seldom that the hog recovers.

The feeder must be on his guard against this disease. Dry, well-ventilated pens and careful feeding will generally enable him to avoid disaster. Animals which become affected should be kept in dry, warm quarters. Dr. Craig ("Diseases of Swine") says: "Salicylate of soda is the most useful drug to give in this disease. The dose is twenty or thirty grains in the feed, or as a drench, three times a day. Larger doses, and at more frequent intervals, may be given in acute cases for a short time. Quinine and bitter tonics can also be given. Blistering ointments and liniments should be applied to the inflamed articulations."—G. E. Day, Ontario Department of Agriculture.

Averaged Size Sows Best.

Where many make a mistake in the selection of breeding stock is in choosing those animals which possess the greatest size, regardless of quality or conformation, writes Mr. J. Carmichael, University of Illinois. It is frequently the case that the larger ones are the more profitable, but year in and year out they are not as profitable in the production of market hogs as are the average-sized sows. The average-size sows may not farrow quite as many pigs as those above the average in weight, but they will save a larger per cent. of pigs farrowed, and the offspring will almost invariably be more uniform. Take, for instance, in the herds where they are raising annually about 1,500 pigs, it is the general experience that the extreme sized sows are the most unprofitable and more expensive to handle on account of the greater amount of feed consumed, and the extra labor and space required to care for them. The other extreme—that is, the small, midget female—is also to be avoided, because she will likely produce a very small litter, and the pigs must be kept a long time before they are heavy enough to market to a good advantage."



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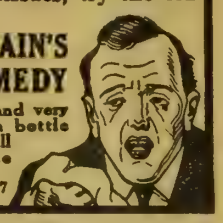

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THE HORSE

Shaping Colts Feet an Important Work Never to Neglect.

Remember the Old Saying That "as the Twig is Bent the Tree Inclined."

It is a bright and true saying that "as the twig is bent the tree's inclined" and this is as applicable to the foot of the colt as it is to the historic twig. The time to start shaping the foot of the colt is as soon as the first irregularity of shape or growth is apparent. To illustrate this point I will say that if the colt shows a disposition to carry most of its weight on the heels, thereby premitting too long a growth of toe, the toe should be cut back if possible to correspond with the heel bearing. If this is neglected, as the colt attains age and weight, the tendency is toward undue straining of the tendons of the leg and a lowering of the pastern to a point where later in life it is quite impossible to ever overcome the defect.

Then, too, the foal may show a tendency to wear away the feet on the inner side, causing toeing-out. In this case it is self-evident that the foot should be at once trued or leveled by carefully trimming the outer wall of the hoof to a level with the inner. Should the colt show a disposition to wear away the outer wall of the hoof. the above work would simply be reversed, that is, cut away the inner and true to the outer wall.

Relative to the great importance of this work I will say that one of the most successful breeders and exhibitors of horses today in the United States has his colts in the blacksmith shop with their dams once every two months, when both the feet of the colts and the dams are carefully trimmed, and frequently light shoes or plates are fitted to the colts when they are four or five months old, when the foot shows a persistent tendency toward irregular growth.

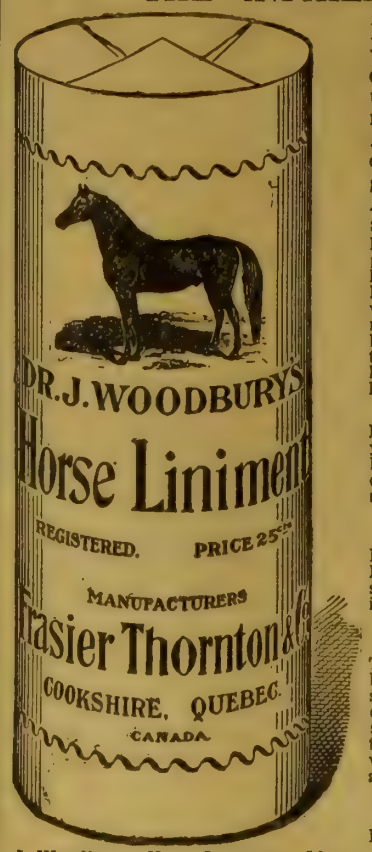
How Trimming Should be Done.

For the first four or five months of the life of the colt the hoof can readily be trimmed with an ordinary jackknife, and thereafter an ordinary pair of blacksmith's cutting pinchers is the only tool needed. These should be found on every farm in this country where colts are raised and be used regularly in keeping the feet of all the horses on the farm in proper shape, which adds not only to their comfort, but to their personal appearance and value as well, for there is no horse that is not as poor as his feet.

The wall of the hoof is that portion which surrounds the foot, and is alone seen when this is placed on the ground. It is fibrous in structure, the fibres passing from above to below, as they grow from where the skin terminates. Externally, the fibres are dense and resisting, but those nearer the interior gradually become soft and spongy. The growth of the wall is indefinite, it being the part which has to sustain wear through contact with the ground.

When the foot is lifted, the sole and frog are seen on its lower or ground surface. The sole is usually more or less concave in a healthy foot. It is fibrous like the wall, its fibres passing in the same direction, but they are much softer and their growth is definite breaking off in the form of flakes when they have reached a certain length. The frog is a triangular mass of somewhat soft and elastic fibrous horn, situated at the posterior part of the sole. Like that part, its fibres are also of definite growth and flake off in large patches from time to time. The wall sustanis weight and wear on all kinds of ground; the sole is adapted for sustaining weight on soft ground more particularly, while the frog has a most important use in acting as a cushion to support the powerful tendon which flexes the limb, in diminishing jar and in preventing slipping.

Dr. J. Woodbury's Horse Liniment
THE INFAILLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds. distemper and cuts and would say that no lumberman should be without it.
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Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.
Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse. I recommend it to my friends. E. J. Anderson, Truro, N. S.

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sionally individual peculiarity has an influence.

Precautions to Take

Care should be taken to avoid blistering the flevures of joints either by rubbing in the ointment or by permitting it to come into contact wtih those surfaces. Here the skin is thin, and blistering is apt to occasion cracks that have a tendency to ulcerate, and are difficult to heal on account of the constant movement of the joint. The front of the hock, the back of the knee, and the hollow of the heels should always be thickly smeared with clean lard before any blistering agent is rubbed into parts adjacent to them. Do not remove the shoe from the foot of the limb about to be blistered, or until the soreness has passed off, as the horse is most intolerant of pain, and will kick the wall or stallpost with his hind feet, or stamp, scrape and paw the ground with his fore ones, breaking and doing serious damage to his unprotected hoofs. Never blister a horse "all round," that is, all four limbs at once, which is sometimes done with the idea of "freshening his legs" or "straightening him on his pins." This is real cruelty and ought to be punished as such. If it is ever necessary to blister all round, the two fore or two hind limbs, or one of each crosswise, should be seelcted, and the others deferred until the pain and soreness of the first application has passed off.

Protection Against Self-Injury.

Short litter or sawdust should be provided until the blistered surface has healed, as the ends of stiff straw irritate the wound. As the horse is not permitted to lie down when blistered there is no necessity for a thick clean bed, and whatever is supplied is sure to be disturbed by pawing and stamping. The animal must also be protected against attempts to injure himself. There are very few parts of his body that a horse cannot get at wtih his mouth, and if this is permitted a twofold injury may result. The lips may be blistered by transference of a portion of the material to them, and the horse rendered unable or unwilling to feed, while if the horse gnaws the blistered surface with his teeth, which he will do if he can get at it, a permanent blemish may likely result. It is not sufficient to prevent a horse getting at the blistered part with his mouth—care must be taken that this is not brought to the lips. Horses blistered in front, unless the head is tied high and short, will lift the limb to meet the mouth. For general purposes, and after the worst of the irritation has passed, the appliance known as "a cradle," which fits round the neck so that the head cannot be lowered or turned towards the flanks to any great extent, is ample protection. A cradle can be purchased from any veterinary instrument maker, but an appliance quite as useful, if not so neat, can be constructed at home out of broomsticks and cotton spools and some stout cord. With a properly fitted cradle, the blistered animal can be given a great deal of liberty, can feed from the rack or manger, and may be let loose in a box or yard much sooner than otherwise would be the case. This is often most advantageous, as walking about tends to reduce the swelling that frequently follows active blistering, and permits of the animal resting its limb by lying down. Blisters should never be rapidly repeated, for if this is done sloughing of the skin results, and there is a premanent blemish consequent on destruction of the hair follicles. In cases of chronic lameness time should be allowed for the hair to begin to grow again before a blister is repeated.

Treatment After Blistering

When the blister has done its work the next step is to assist the desquamation. The result of a severe blistering is peeling of the skin, which comes off in scruf and scales, and with it the hair, and to promote this the surface should be freely dressed with Carron oil (equal parts of linseed oil and lime water) or lard. In cases where a strong cantharides blister has been used the surface should, however, be first washed with warm water and soap. The reason for this is that cantharidine, the active principle of the blister beetle or Spanish fly, is soluble in oil, and the application of grease would rouse the blister into activity again. Unless there has been sloughing from too frequent repetition or the use of too powerful or unsuitable agents, the hair soon grows again, and invariably with renewed vigor, for all vesicants are hair stimulants. Rest is, of course, always essential, not only during the active stage, when it would be downright cruelty to work the horse, but afterwards, if the best results are to be obtained; indeed, there is reason to believe that much of the benefit attributed to blistering and firing is really due to the rest that accompanies these operations.—R. P.

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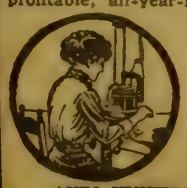

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POULTRY

Breeding for Egg Production.

Those wishing to keep chickens only for egg production would do well to select an egg breed like the Leghorns, Hamburgs or Anconas. The Leghorns are probably the best of these. There are many varieties and sub-varieties in this breed, but the White variety stands out in a class by itself. These are just as good egg producers as any and besides they are almost the ideal broilers. The Leghorn is a bird of graceful curves, alert, active, hardy and prolific. They have no standard weights. They are probably better summer layers than winter layers as they are somewhat sensitive to weather conditions. Cold weather, long continued, will check egg production more in this breed than in the general purpose breeds, but on the other hand they also respond quicker after milder weather comes on. Where summer eggs are the chief consideration, together with a breed adapted for broiler production, we cannot do better than recommend the Leghorns.

The Anconas are a Leghorn-Minorca cross and are but little grown in this country. Type and general qualities are very similar to the Leghorns. The Hamburgs are a rounded and plumper bird than the Leghorn, but they are rather difficult to raise through their first few weeks of existence. The Minorcas have nothing to commend them to the ordinary farmer. The old time Minorca might have been a fairly good chicken, but the present day Minorca with his long, narrow body, long legs and lack of constitution has very little to commend him to any one but the straight fancier. His constitution and egg producing qualities have been spoiled almost entirely by trying to breed to fancy qualities only.

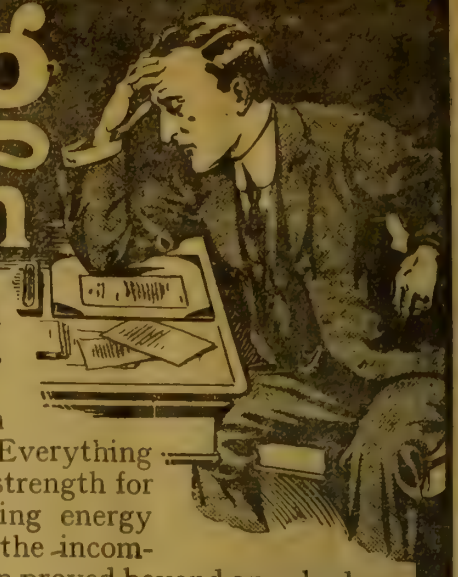
The meat breeds are too slow to mature to be of much use in this country. The large amount of feather growth on the feet also goes against them, especially in the early, wet fall and spring months when they are liable to freeze their feet. Small flocks may work out all right, but for an average size farm flock they would require too much care and attention. For crossing on other breeds the Brahma is probably the best. Crossed with Barred Rocks they make pretty good roasters and excellent capons. However, there is no special need to go into detail about the qualities, type and so on of these breeds as they are hardly adapted to farm requirements.

What we have stated about various breeds are facts as we have been able to gather them during the last twenty years of experience in farm poultry work, working on large poultry plants and also clolege poultry plants. We have endeavored to give an impartial summary of these observations not on the basis that we know it all and this is the final word, but rather that we came to these conclusions gradually and that as the years go by and wider experience is gained, we may from time to time make further observations and draw further conclusions in regard to the qualities of the various breeds of poultry.

Breeding for Egg Production

In breeding for egg production the farmer should select his best winter layers and mate them with an active vigorous male bird that grew quickly and matured early. The hens should of cousre be selected not only for heavy production, but also for vigor and vitality. If the hens are rather large and oversize a medium sized male will do, but this averaging up has to be taken into consideration. It is best to discard hens that are very much undersize because there is always a tendency in the offspring to deteriorate in size year after year, if such birds are used promiscuously.

Brain-Fag and Exhaustion



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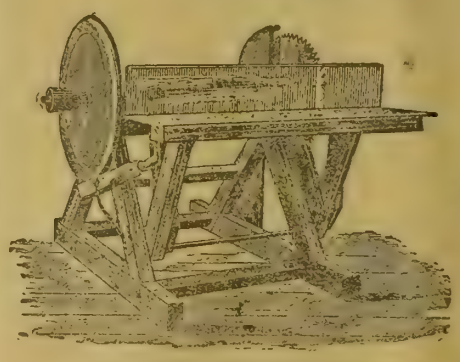

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Try an Ad in the FARMER

Under farm conditions it would be worth while to take 15 or 20 of your best layers, or hens that are laying in December and January and separate them from the rest of the stock and trap nest them. In this way the best layer could be found and her eggs marked and her cockerels kept for breeding purposes the next year.

I firmly believe that the average farmer has in his flock the nucleus for a heavy laying strain only he does not know where she is. The cockerels from this heavy laying hen should then be mated back again to the next winter's heaviest laying pullets and the following winter in his second year back to his own pullets, using his son, which should be from the heaviest laying pullet, to mate back to the yearling hens. This is the best method of breeding and selection I know of and if a farmer is fortunate enough to own a flock of pure breds to start with he can soon build up a heavy laying strain of his chosen breed. Where mongrels are used to start with, pure bred males should be purchased the first year or two until the flock becomes uniform as to size and color and then this method of breeding and selection should be followed.

Our own experience in this line of breeding has been this, that with the use of the trap nest for identifying heavy layers and breeding from them only the production was raised from an average of 139 eggs a year up to 167 from the 25 best layers. Inbreeding was followed and later on line breeding and selection will lead us to we shall see as the years go by. If we give due consideration to the importance of having only strong vigorous and healthy birds to breed from we are satisfied that the question will work out all right.

Investigation work has shown that heavy laying is transmtited by the male birds and therefore farmers generally would do well to use male birds from recognized laying strains. Such birds can usually be purchased at two to three dollars each whereas males from exhibition stock very seldom sell for less than five dollars.

It is often claimed that for best results yearling hens should be mated with cockerels and yearling males with cockerels and yearling males with pullets, but it is difficult to state that such will always be the case. Personally, I believe that environment, method, kind of food fed and general care play a bigger part in the results, providing that the pullets and cockerels are mature, than any special way of mating. As a rule though the yearling hen produces a larger chick, fluffier and apparently more vigorous than the pullet for the simple reason thta she lays a bigger egg. If pullets are mature, healthy and vigorous I would expect, other things being equal, to get just as strong chicks from them as from the yearling hens.

The period of usefulness of the male from a breeder's point of view usually extends over the second year. The number of females to be mated with a male for best results decreases year after year. A male generally passes his period of usefulness after the third season. The number of females to go with one male depends somewhat on the breed. In the egg breeds one male to every 15 to 25 hens is about the right ratio; in the general purpose breeds one to 12 to 15 females; and in the meat breeds one male to 8 to 12 females. These ratios may vary with some individuals. A specially active vigorous male in the lighter breeds will often fertilize the eggs from as high as 35 hens and in the general purpose breeds as high as 25 hens. Usually on the tenth to the fourteenth day after the male is put with the females the eggs will be quite fertile. On the third day some of the eggs may already be fertile if the hens are in full laying. After the males are separated the eggs will commence to show a decrease in fertility, covering a period of 14 to 20 days and even then an old egg might still be fertile. But generally after the fourteenth day eggs may be guaranteed non-fertile if sold for market use. The practice of using alternate males has a tendency to produce higher fertility in the eggs. Using one male a day or two and then changing off to the other one is a common practice. It is, however, hardly practical for the farmer to follow this as it requires considerable labor at a busy season of the year.—M. C. Herner, Professor of Poultry Husbandry, Manitoba Agricultural College, in the Grain Growers' Guide.

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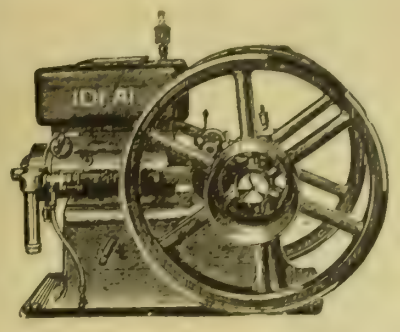

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A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative.

It has often been said that there is more money in the keeping of hens on an ordinary farm than many other branch of agriculture. Mr. Percy LeLacheur of Murray Harbour last week kept 65 hens, about 26 of which were Plymouth Rock hens, the rest a mixture of Leghorns and Minorcas. During the year 1915 he sold eggs to the value fo $114.49, also 40 cockerels, for which he received $46.72, 20 hens, for which he received $5.67. Canned 13 hens for use the coming summer and has now 67 hens, all Plymouth Rocks, the oldest of them 1½ years. Besides this he had the eggs used by the family and also the hens which were killed and eaten. This makes a cash revenue from 65 hens of $166.85 in the year. Who can beat this?—The Examiner, Charlottetown.

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Reports of County Farmers' Association Delegates at the Recent Nova Scotia Farmers Association.

Report of the Annapolis County Farmers Association:
Mr. President:

The membership of this asociation for the past year is 102, much less than formerly.

We have not had as many institute meetings as usual owing to the difficulty in securing lecturers. Mr. L. D. Robinson and G. E. Sanders, Entomologist, being the principal speakers at our annual meeting. We were favored with an address by W. Saxeby Blair, Experiment Farm, Kentville, and G. E. Sanders.

A number of our members entered the field crop competition in wheat and oats. One of the competitors scored 96 points in wheat.

The hay crop was exceptionally large with an abundance of clover. Grain was fairly good. Potatoes were light; turnips were not as large as usual.

Increased interest is shown in the dairy industry, with larger production. The creamery at Lawrencetown has had a successful year. The list of patrons is increasing.

Our crop of fruit for the last year was very disappointing, both as to quantity and quality. Yet many of the orchardists had good results, due to intelligent and persistent spraying.

The executive and others of our Association have spent much time, energy and some means to forward the erection of an agricultural demonstration building at Lawrencetown. We have to thank Principal Cumming, Secretary for Agriculture, for the readiness with which he has given his time and the means at his disposal. Also our thanks are due to the Federal and Local Governments, the Municipal Council and gifts of individuals toward this undertaking.

We anticipate that on the eighth of February, Principal Cumming, Secretary of Agriculture, at a grand opening, will declare this building opened for agricultural purposes.

The following days of the week will be taken up with short course work. We will thus be entering a new phase of farmers' education in the county, which opportunity, we hope, will be taken advantage of by very many.

L. W. ELLIOTT,
Secy. A. C. F. A.

Report of Kings County Farmers' Association

This Association sends two delegates to your Association this year, Mr. P. L. Morse of Berwick, and George Hutchinson, of Morristown. Our membership the past year was 50. We held nine meetings in the county, seven of which were addressed by L. D. Robinson, the other two by W. H. Woodworth and W. Saxby Blair. Total attendance 214. These meetings were held in February and the weather was very bad. A picnic was held at the Agricultural College in June. Quite a large number attended. The balance on hand at the anual meeting was $24.78.

Fox farming and Western land speculation does not seem to engage the attention of our farmers as much as in past years. Mixed farming is very popular at present, and the day may come when apple growing in the Annapolis Valley will be a matter of history.

Respectfully submitted,
W. H. WOODWORTH,
Secretary.

Yarmouth County Report

In behalf of the Yarmouth County Farmers' Association, I beg leave to report:

The Association held twelve regular monthly meetings during the year and the attendance was large and enthusiastic. Different subjects were discussed at each meeting, bringing under consideration matters of importance to farmers, such as manures and fertilizers, and their most economic use, dairying and the development of the creamery enterprise, potato culture and spraying, grain crops including a more extended use and cultivation of winter grains, rye and wheat, and so on with other matters of prime importance.

Our plan is to have a committee map out a program or subject for each month at the beginning of the year appointing a leader for each meeting. After routine of business, the leader introduces the subject which is then thrown open for general discussion and usually elicits warmth.

This stimulates interest in our membership so that we have a large annual membership, nearly 300, a long roll of five year members, who come in at a slightly reduced rate and a noble and worthy list of life members.

While the Agricultural Society is mainly devoted to sustaining our great Annual Exhibition, the Farmers' Association is the place where we meet monthly in our Farmers' Parliament and discuss subjects of mutual interest, and exchange experiences. We find this the quickest and most profitable means of promoting our agriculture.

Twelve special meetings were held during the year at distant places in the county, where the inhabitants find it impractical to attend the monthly meetings owing to distance. These meetings held in country school houses, farm houses and village halls were largely attended by interested gatherings, whose business—fishing by the shore, and lumbering inland—had for so many years drawn attention away from the farm, that many of the simplest methods and most approved methods of agricultural procedure were almost forgotten. Much good work is done by this means.

Our general object is to promote practical agriculture by the shortest and most direct methods that come to hand.

Our Association imported two car loads of all kinds of seeds for the members at greatly reduced prices. These seeds of course, were ordered in advance by the members through the Secretary.

The Associ tion held a seed fair for the display of the produce of our local seedraising industry. It is said that Yarmouth has a unique climate, admirably adapted to the production of farm seeds. Our Corning Turnip Seed enterprise is assuming large proportions and the output is largely exported to other localities. Some exhibits at Provincial and Dominion shows have a government test record and certificate of 98 and 99% purity and germinating power.

The short course held under the auspices of the Farmers' Association in the Exhibition Building of the Agricultural Society, has been a great success. The attendance from every section of the county has been two hundred and upwards. The talks on seed selection, fertilizers and cattle judging have been most instructive and much appreciated by many of our young men who cannot find the time or means to go to Truro.

We were visited at one of our meetings by Principal Cumming, whose business talk on creamery methods and soil improvement was most illuminating.

Our creamery output last year totalled forty to fifty thousand dollars.

But the great social event of the year in Yarmouth is the great annual picnic of the Farmers' Association.

The picnic was held this summer about the last of August at Lakeside Park and was attended by upwards of five thousand persons from all sections of the county mingled amongst whom were a large proportion of the population of the enterprising town of Yarmouth. The best of humor prevailed and the sports were carried out with great spirit.. The picnic is exceedingly popular as a fixed institution and is the ocacsion when everyone goes to meet and see everyone else. Old acquaintances are renewed and new friendships formed. The picnic together with the general social spirit which our Association makes it one of its prime objects to foster renders the existence of the Association indispensable to the welfare of Yarmuoth County.

We are not going back in Yarmouth County, we are co-operating to accomplish results.

GORDON T. LEWIS.

THREE VITAL QUESTIONS
Are you full of energy, vital force, and general good health? Do you know that good digestion is the foundation of good health; Pains and oppression in stomach and chest after eating, with constipation, headache dizziness, are sure signs of Indigestion. Mother Seigel's Syrup, the great herbal remedy and tonic, will cure you.

AFTER MEALS TAKE MOTHER SEIGEL'S SYRUP. AND BANISH STOMACH TROUBLES

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No. 6 Com. Drill & Wheel Hoe
No. 1 Double and Single Wh. Hoe
No. 27 Disk Cultivator
No. 20 Wheel Hoe
No. 11 Wheel Plow
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Practical Gardening Tools

TOOLS like these will do all of the necessary work (except plowing and harrowing) economically, whether for home, farm or market gardens. You can plant certain crops close and straight, and work them close and safely, with wheel hoes. You save ground, save heavy investment for tools at the start and yet do the best kind of work with profitable results.

IRON AGE Hand Seed Drills and Wheel Hoes

Will sow, cultivate, ridge, furrow, etc. better than you can with any old fashioned tools and ten times quicker. Pushed ahead a step at a time, these tools can be worked by women, or grown boys or girls. We show here a few only but we make 38 styles and combinations from which to choose. Prices, $3.00 to $14.50. There are also many attachments for special work

Ask your dealer to show them and write us for booklet "Gardening With Modern Tools." Also, for horse hoes, harrows and cultivators, sprayers, etc.

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Notice to the Public

A man named Windross is alleged to be taking subscriptions for the Maritime Farmer in Antigonish County and elsewhere in Nova Scotia. We wisn to warn the public that Mr. Winross has not sent us the names of subscribers from whom he is alleged to have made collections, nor has he made any returns to us for same. Don't give Mr. Winross any more money for the Maritime Farmer.

THE MARITIME FARMER
Sussex, N.B.

The Best Treatment For Constipation.

The Experience of One Who Knows and Places Dr. Chase's Kidney-Liver Pills First.

It is not difficult to secure a medicine that will effect movement of the bowels. To cure Constipation and the complications which arise from it is another matter.

Constipation of the bowels is usually preceded by torpid action of the liver. Hence it follows that if Constipation is to be cured the liver must be set right. And here lies the secret of the success of Dr. Chase's Kidney-Liver Pills. They awaken the action of the liver and insure a good flow of bile, which is nature's cathartic. The liver, kidneys and bowels are invigorated and regulated, and the troubles with the digestive system disappear.

Mr. H. M. Bell, Innisfail, Alta., writes: "For some considerable time I have been using Dr. Chase's Kidney-Liver Pills, which I have obtained through your firm. I suppose during my life I have used nearly all the best-known pills, as I have been subject to Constipation and digestive troubles. A friend recommended Dr. Chase's Kidney-Liver Pills, and I can honestly say that of all the pills I have tried nothing has suited me better—no griping—action always insured, and fine for the kidneys. This is how I have found them after a thorough test and you may use this statement if you like."

This letter should convince you of the merits of Dr. Chase's Kidney-Liver Pills, but there is nothing like personal experience. If you do not feel like risking 25 cents for a box, write to us for a free sample box, mentioning where you saw this advertisement. Put this medicine to the test when you have indigestion, constipation, biliousness, backache or kidney derangement. The results will soon prove to you the superiority of Dr. Chase's Kidney-Liver Pills. One pill a dose, 25 cents a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto.

Five Good Reasons

Whether you have no Separator at all or are using an old, partly worn out machine, there are five good reasons why you should buy a "STANDARD."

1st---SKIMMING

Repeated tests by leading Dairy Authorities in Canada and elsewhere, have proved beyond question that the "STANDARD" skims cleaner, under all conditions, than any other Cream Separator.

Prof. H. H. Dean of the Otnario Agricultural College, Guelph, says: "Our Inspector, Mr. Smith, makes the following report on the test made with our Separator, in which 150 lbs. of whey, containing .29% fat, was skimmed in 21 minutes. The whey cream tested 50% fat, the skimmed whey .01% fat. This we consider a very satisfactory test.

Prof. R. M. Washburn, of the University of Minnesota, St. Paul, U.S.A., reports the following results:

From 65 lbs. of milk containing 4.6% fat, separated at a temperature of 90° Fahr. Percentage of fat in cream, 30%. Percentage of fat in skim milk, .01%.

2nd---CAPACITY

Every "STANDARD" Separator skims over its rated capacity.

A test made at the Eastern Dairy School at Kingston, with a Size 4 "STANDARD" listed capacity 450 lbs. per hour, gives the following results, with milk separated at 90° Fahr.

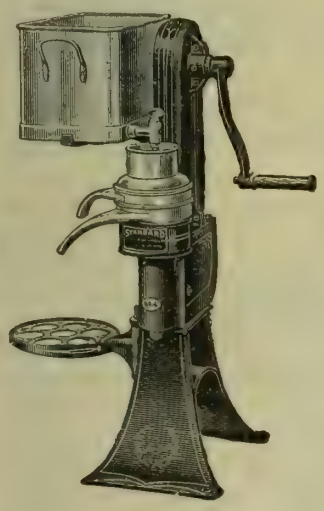
Pounds of milk separated	200
Time taken for separating	23 min.
Percentage of fat in cream	27.5%
Percentage of fat in skim milk	.02½%

This shows that, although **rated at 450 lbs. per hour,** the machine actually **skimmed at the rate of over 520 lbs. per hour,** and still skimmed closer than most other separators do while skimming at their rated capacity or less.

3rd.---CAPACITY CHANGE

The capacity of a "STANDARD" Separator can be increased at any time by a simple change of parts at a low cost. The "STANDARD" need never be too small.

For instance: One of our customers, early in 1915, bought a Size 2 "STANDARD" capacity 350 lbs. per hour. This year he had nearly twice as many cows milking, and needed a larger machine. We increased the capacity of his "STANDARD" to over 600 lbs. per hour by giving him a new Size 6 bowl, etc., for the difference in price and an insignificant charge for depreciation on the old parts turned in.



An important point in connection with our Capacity, Change is that we supply a new bowl complete, of the larger capacity required. It is not a make-shift change of skimmers.

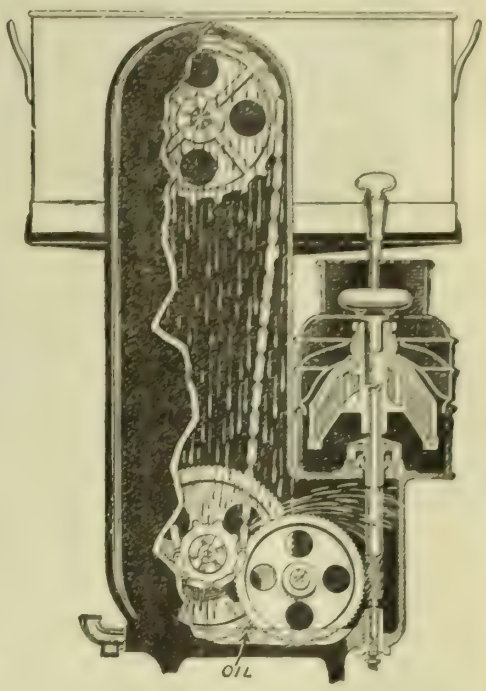
4th--DURABILITY AND OILING

We use the best quality of Phosphor Bronze in our spindle bearings and worm gear.

Our shafts are made from the finest Drillrod Steel.

The main gear is of the new style helical type, and worm sleeve on the bowl spindle is interchangeable.

All the running parts of the "STANDARD" Cream Separator are contained in an oil-tight, dust-proof casing, and run in an oil bath. On account of the "STANDARD'S" unique, self-oiling system, there is no wear on the running parts, and "STANDARD" Separators are good for years of hard work. The "STANDARD" is the only real self-oiling cream separator.



Standard

5th--SERVICE

The "STANDARD" is in every respect a Canadian machine, built right here at Renfrew, Ont., by ourselves, and we will stand up to our guarantee, and protect you and every user of our machines. Think what this means to you, if you need spare parts, or expert assistance at any time in a hurry. You cannot expect manufacturers outside of Canada to give you service equal to ours in speed or completeness.

The sectional cut of the "STANDARD" shown above, will give you an idea how it is built, but we want to show you a machine in actual operation in your own dairy, and will be glad to do so without any cost or obligation on your part.

Just write and tell us that you would like to see the "STANDARD" at work. We will do the rest.

Our latest Cream Separator book is free on request.

The Renfrew Machinery Co., Limited, Head Office & Works, Renfrew, Ont.

Agencies Almost Everywhere in Canada.

MARITIME BRANCH, SUSSEX, N. B.

THE CONVENTION OF THE

Farmers', Dairymen's and Provincial Seed Fair Association

WILL BE HELD IN

Fredericton, February 28th to March 2nd, inclusive

Thursday, March 2nd, will be Live Stock Day and will be spent at the Experimental Farm. The work of the day will be under the direction of Prof. Barton of Macdonald College.

Delegates attending the Convention will ask for Standard Certificates over I. C. R. and C. P. R.

STRAWBERRY PLANTS!

One Grower in New Brunswick sold $5000.00 worth of Strawberries from a ten acre field last season. Another received $3000.00 from six acres in berries. The costs were about one hundred dollars an acre to picking time; figure the profit for yourself. These men bought 150,000 Senator Dunlaps from us last spring. This shows what the most successful berry growers think of the Senator Dunlap, the little Giant of the Strawberry world. We can supply plants for the professional Strawberry grower, for the man who grows an acre or two as a side line to general farming, or for the family garden. Good strong well rooted plants are more than half the battle in successful Strawberry culture. Start right. Don't take plants from an old bed, or from the side of the rows as a gift. All farmers know that poor seed means a poor crop.

Our Senator Dunlaps, $3.50 a thousand. We make a discount on large orders. Other varieties, Sample, Valeria, Arnout, William, etc.

CATALOGUE FREE.

CYRUS & MANNING ELLS, - Port Williams, Nova Scotia

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

AN EVEN SCORE.

(By Leigh Gordon Giltner)

"I can't see," proclaimed Travis in the maddeningly superior tone his wife found so trying, "I really cannot see, Edith, why you and your sex as a whole are such abject slaves to the dictates of fashion. You're like sheep—one leads and the rest follow, without the slightest reference to the fitness of things. If you could only be brought to realize how infinitely more attractive you'd be if you'd cultivate individuality in costume and coiffure instead of lavishly following the prevailing mode. But if a thing has a vogue you adopt it, regardless of any question of suitability or becomingness. Because dainty little Mrs. Graves looks svelte and graceful in a sheath skirt, old Mrs. Van Leer, who weighs two hundred if she weighs a pound and resembles a dirigible in motion, orders it duplicated—the skirt, not the effect, I mean—"

"Then you think, Tom, a woman should be a law unto herself in matters of dress?"

"Decidedly. She should either ignore the fashions altogether or adapt them to the expression of her personality. She should determine what best suits her particular style and proceed to wear it regardless. She should eschew all cosmetics and not go about looking like a pierrot—or a marshmallow. She should decide upon a bcoming coiffure—and stick to it, despite fashion's fluctuations. A year ago the average woman was wearing enough false curls, puffs, braids and rats to stuff a sofa-pillow; when suddenly, because some foreign actress or dancer took to dragging her hair down in wisps over her ears and confining it with a string of colored beads—a bandeau I believe you call it—one and all followed suit, regardless of contours or consequences—result, in the average instance—a cross between a snake-charmer and an Indian squaw. Ours may be a free and enlightened country, but you women are slaves every one of you to the whims of a coterie of Parisian man-milliners who aid you to make spectacles of yourselves. And you meekly accept their decrees—whether it is a matter of hoop-skirts or of no skirts at all. Now our sex—"

Edith could not forbear a significant and slightly sardonic glance at her husband's immaculate costume. His trousers were correctly creased, his gray Ascot properly tied, and every detail and accessory perfect in its fitness.

"A man," Travis made direct answer to the unspoken suggestion, "—Edith, this cream's a bit sour. It has quite spoiled the cereal. You may take it away, Ellen—. A man, as I was saying, goes to a reliable tailor, orders a suit of the best material in stock—and wears it till it's threadbare, regardless of trifling changes in the popular cut and color; while a woman will discard a perfectly good gown, simply because a 'Paris fashion hint' convinces her that the sleeves are too full or the skirt a trifle wide. Take this suit I'm wearing."—with a glance of pardonable pride at the natty rough gray mixture in which his well-knit figure was clad—"I paid Matthews seventy-five for it two seasons ago and it's quite presentable still. The evening suit I ordered for our wedding four years since has done duty ever since. I shall wear it quite contentedly this evening while you'll doubtless fret because you haven't a new gown for the occasion."

"This evening?" Edith echoed.

"Yes. I quite forgot to mention that Trescott of our Montreal branch and his wife are at the Queen's for a day or two en route to Winnipeg. Trescott's influence means a lot to me—he's the coming vice-president of the concern without doubt—and he's a very decent chap besides. I felt I'd like to do something for their pleasure, so I ordered a box for Forbes-Robertson in his new play this evening. I thought you could come in on the interurban; we'd all dine together and afterwards go to the show. What do you say?"

"Why, it will be lovely," she responded eagerly. "But—er—is Mrs. Trescott very imposing in appearance, Tom?"

"Mrs. Trescott is an unusually beautiful woman; but aside from that she has the fortunate faculty of always being correctly costumed for any and every occasion. Why do you ask?"

"Why, you see," faltered Edith rather shamefacedly, "the fact is I'm afraid I haven't anything very new or very suitable—"

"New, see here, Edith," Tom interposed impatiently, pushing his plate aside. "I make you an ample allowance and there's no reason in the world why you shouldn't have sufficient and suitable gowns for all occasions. I am anxious to impress the Trescott's favorably for business as well as social reasons, and I shall expect your appearance to do me credit. Shall I meet you at the car-station? Or since its' only a block and I'll have to dress, can't you join us in the leather-room on the third floor? It's more private than the parlors. Perhaps, you'd best make your toilette at home if you take the seven o'clock car, so as to avoid delay. We'll spend the night at the Wyndham, of course. I shall expect you to look your best. You have, or should have, plenty of clothes and there's no reason why you should not make a creditable appearance."

He caught up his hat and coat and with a hurried goodbye was off to make the eight o'clock interurban into the city of which Crestwood was a suburb. Left alone in the empty breakfast room, Edith did some rapid thinking and made certain deductions not wholly flattering to her spouse. Tom was one of the men who incline to the "Sir Oracle" attitude—and it was growing upon him. He had very decided views on all subjects which he did not hesitate to express. He was exceedingly liberal with unsolicited advice, suggestion and criticism; he would have cheerfully corrected Caruso's method of tone-production and pointed out to Paderewski the true interpretation of one of his own compositions. He criticized his wife mercilessly, her costumes, conversation, the conduct of her household in its various detail, from the management of her maids to the brand of breakfast cocoa she favored. He corrected her simplest statements and aspersed her tastes and interests; he scouted her feats at golf and she was forced to defend her soundest play at cards. But it was what he termed her "slavish subjection to style" which especially excited his critisism and contempt—though no man alive had less fondness for a frump than he. Edith was a patient woman but patience has its limits.

"I'll do it!" she said at last as she rang for the maid to clear away the remains of the dainty breakfast, "it's pretty radical and it will take courage, but Tom needs the lesson."

"I'm most anxious to meet Mrs. Travis," pretty Mrs. Trescott, whose perfections Tom had not exaggerated, was saying graciously as she, her husband and Travis foregathered in the attractive leather room at the Queen's Hotel, pending Edith's arrival, "I've heard such pleasant things of her."

"Yes," corroborated her husband heartily, "our Mrs. Stacy whom you entertained when he was here last spring was enthusiastic in his praise of her. He said, I believe, that she was the cleverest and most stunning woman he met while west."

"Well," Travis conceded with the easy pride of possession, "That's putting it rather strong, but Edith really isn't half bad looking; she has abundant tact and dresses in admirable taste and, on the whole, I'm rather proud of her."

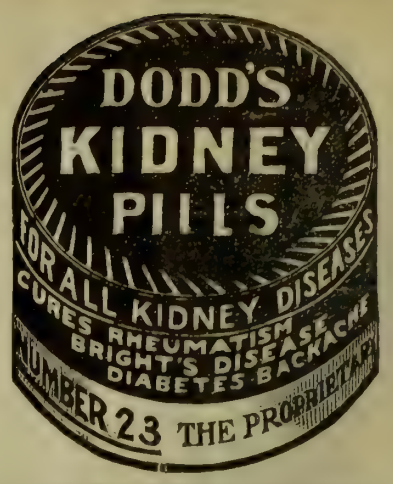
Even as he spoke a figure appeared in the doorway, pausing uncertainly on the threshold—a figure so alluring to the casual eye, that, taking in the general effect of her appearance, Travis did not, for the moment, glance at her face.

"Looks as if she'd stepped out of 'Godey's Lady Book'," he commented inwardly as the archaic character of the newcomer's costume communicated itself. Then he lifted his eyes to the face above—and gasped.

"Edith!" he hardly realized that he had spoken.

"I trust I'm not late,"—the voice was certainly Edith's—"Something went wrong with the—the circuit—I think they said, and we got in fifteen minutes behind time. Tom, present me to Mrs. Trescott." How he got through with the ordeal and subsequent amenities, Travis never knew. His eyes dwelt with a horrible fascination upon the Edith he was proclaiming his wife. The Edith, admirably costumed to the minutest detail, of whom he was secretly proud, was not in evidence. In her stead was a typical village matron in gala attire. She was wearing a foulard of glaringly hideous design and antiquated cut (the pattern had been given to Edith before her marriage by an erratic aunt of notably poor taste and Edith had had it made up, to avoid wounding Aunt Evelyn, in whose honor she occasionally wore it.) The skirt was voluminously, full (Mrs. Trescott's charming gown fitted her like a glove); the sleeves were long and bouffant when they should have been short and scant; the high collar was hideously unbecoming; (Edith had not worn a high collar in years). Her face was guiltless of any trace of make-up and on her pompadoured and ratted hair was perched a hat of the vintage of two years previous which Edith had unearthed from a box in the attic. She feared she had rather overdone it but in reality the effect was quite convincingly that of the woman absorbed in other things to the exclusion of the modes.

The dinner in the cafe, softly lighted with rose-shaded candles and hooded electrics, and fragrant with hot-house roses, was a perfect nightmare to Travis. It seemed to him that every notable man and woman of his acquaintance either passed into or out of the cafe while the service was in progress and that at least half of these paused beside his table long enough to be presented to his wife. The contrast between Edith and Maud Trescott was painful. The breeding of the Trescotts was too perfect to admit of any slightest sign of amazement by so much as the quiver of an eyelast, but Travis, who despite his diatrites against fashion, was her very loyal devotee, suffered in complete comprehension of what their emotions must be. He had, for the once, quite forgotten his diatrite of the morning and was at a loss to account for Edith's vagary; but suddenly it flashed upon him and with it a ray of hope. Surely



A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness, constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by this method. Write today. Address: Mrs. M. Summers, Box 309, Windsor, Ont.

WOMAN HAD NERVOUS TROUBLE

Lydia E. Pinkham's Vegetable Compound Helped Her.

West Danby, N. Y.—"I have had nervous trouble all my life until I took Lydia E. Pinkham's Vegetable Compound for nerves and for female troubles and it straightened me out in good shape. I work nearly all the time, as we live on a farm and I have four girls. I do all my sewing and other work with their help, so it shows that I stand it real well. I took the Compound when my ten year old daughter came and it helped me a lot. I have also had my oldest girl take it and it did her lots of good. I keep it in the house all the time and recommend it."—Mrs. DEWITT SINCEBAUGH, West Danby, N. Y.

Sleeplessness, nervousness, irritability, backache, headaches, dragging sensations, all point to female derangements which may be overcome by Lydia E. Pinkham's Vegetable Compound.

This famous remedy, the medicinal ingredients of which are derived from native roots and herbs, has for forty years proved to be a most valuable tonic and invigorator of the female organism. Women everywhere bear willing testimony to the wonderful virtue of Lydia E. Pinkham's Vegetable Compound.

after subjecting him to such an ordeal she would feel his punishment sufficient, and after dinner rush up to her room, doff her disguise and appear in propria persona. But alas! to his tentative:

"There's still ample time if you wish to change your dress, Edith," and Mrs. Trescott's pleasant supplement:

"May I be of service? I's a very capable maid, I assure you," she returned a cheerful:

"No, thank you, I'll just remove my hat and fluff my hair a bit. I dressed for the evening before I left home."

Again, in the brilliantly lighted theatre, Travis lived and moved as in a nightmare. Edith's hair, decidedly "fluffed," was a sight—a towering mass of archaic puffs and curls, ornamented with an antiquated aigrette that had been her mother's; her dainty peachy-tinted complexion, lacking the touch of violet talcum with which she usually dusted it, had an unlovely shine; her mnaner (such is the moral support of proper costuming) was less easily graceful and gracious than its wont. Mrs. Trescott's dazzling beauty inevitably attracted attention; and as inevitably, her sober-suited companion came in for unflattering notice and comment. It seemed to Travis that their box was a target for a perfect battery of lorgnettes. He usually delighted in Forbes-Robertson, but this evening he sat stupidly and stolidly through the three acts, wondering if he should attempt to explain to the Trescotts, if they'd fancy him a lunatic or a cad. It was over at last—but woe upon woe. Edith vivaciously suggested supper in the Queen's "Blue Room"—where poor Travis encount red all those of his urban acquaintance he had previously missed. He was sick with humiliation and disgust.

"Edith," he began sharply, when they were at last alone, "may I ask why, when you know how much their interest means to me, you have chosen to humiliate me in the presence of the Trescotts?"

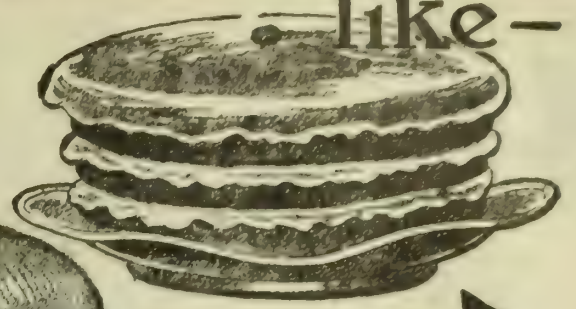
"Tom," she responded pleasantly, "Do you recall the occasion of a large reception when you took my new sheath gown (the first that appeared in Creshwood) as a text, held me up to public scorn and made me the laughing stock of the evening? And do you chance to recall some of any of the things you said this morning? I'm merely cultivating individuality and making my dress express my personality as you suggested."

She smiled sweetly into his eyes as she drew out the pins which held in place that remarkable coiffure. He was "hoist with his own petard"—and knew it. Being not wholly unwise he dropped the discussion.

Trescott suggested a business interview in the reading room at seven-thirty next morning, after which the party of the previous evening would breakfast together. Travis, still too entirely obsessed with Edith's new departure to be quite himself, hardly realized that Trescott was hinting at a possible early promotion for which Travis had hoped for two years. He was still in a species of daze when he sought the cafe where they were to meet the ladies, but he came out of his trance with a sudden start and a wild rush of relief and delight. Edith was coming toward them down the long corridor with Mrs. Trescott and there was little choice between them in the matter of perfect gowning and grooming. Edith was wearing the most distinguished of her many attractive stret gowns; in every particular to the minutest detail, she was absolutely and flawlessly correct. Travis thought happily that he had never seen her so beautiful; Mrs. Trescotts' eyes approved her and Trescott paid her the tribute of more than one admiring glance.

"Well, Edith, you win!" Travis conceded good-naturedly, as half an hour later, he walked with her toward the car station, after a cordial parting with the Trescott's, who had promised to motor out to dine with them as they returned east from Winnipeg. "I suppose I got what was coming to me, but you certainly did rub it in. You'll never guess how I suffered. I hadn't the faintest idea you'd taken the Trescotts into your confidence while I was at the telephone last night and I was sure that early English get-up of yours would queer us eternally with them. But Trescott told me just now that his opinion of you coincided with Stacy's and added thta they hoped to see more of us when I'm promoted and sent east. So, if when they come to Crestwood you give them one of your famous little dinners and look your prettiest—I say Edith,"—breaking off abruptly as a sudden idea occurred to him—"since you're in town why not go around to Madame Laroque's and order a new gown for the ocacsion? I think it's my treat."

A Blended Flour —like—



BEAVER FLOUR

Is The Only One That Is Equally Good For Bread and Pastry

EVERY good Canadian housewife remembers the kind of Bread she got with western wheat flour — the tough, coarse loaf, uninviting, rather tasteless and full of holes.

She knows that such flour cannot make good pastry, no matter how much water she uses in the dough.

"Beaver" Flour is a blended flour—made of the famous Ontario pastry wheat, with the proper proportions of Manitoba wheat added to increase the strength.

"Beaver" Flour makes a good size loaf of bread—sweet, tasty, appetizing—as white and light as snow—with crisp, brown crusts—a truly delicious, nourishing food, that everyone enjoys for every meal.

It makes the kind of Pies and Cakes that you are proud to serve and everyone is glad to eat. Tell your grocer you want to try "Beaver" Flour—the original blended flour. 160

DEALERS—Write us for prices on Feed, Coarse Grains and Cereals.

The T. H. Taylor Co. Limited, Chatham, Ont.

Successful Course in Household Science and Handicraft Now Going on in Sussex.

The Women's Institute Division of the Departmetn of Agriculture is successfully conducting a course in Household Science and Arts and Crafts in the new Agricultural School at Sussex.

The classes conducted daily are as follows:

9-10 a.m.—Basketry and Leather Tooling.
10-10.30 a.m.—Lectures on Composition and Nutritive Value of Foods.
10.30-12.30 a.m.—Practical Cooking, when each student has an oportunity to prepare one or more dishes.
2-3 p.m.—Personal Hygiene and Home Care of the Sick.
3-4 p.m.—Stenciling and Wood Carving.
4-5 p.m.—Needlework and Knitting.

The first course, completed last Friday afternoon, was very encouraging to the department, and of lasting benefit to the many ambitious students present. Possibly the attendance is larger at the Handicrafts classes, owing to this work being newly introduced in the Women's Institute annual short courses. The public was invited to inspect the accomplishments of ten days' work in this popular class, and the students had every reason to feel proud of the many pretty baskets made of reeds and raffia in various shapes. Several pieces of leather work include, magazine and book covers, card cases, change purses, centrepieces, all of various designs and colors. One has only to look a few months hence to see the women reaping the advantage of this useful work, engaged in making pretty and useful articles to adorn the home, to give to their friends at Christmas time, and lastly to adopt as a further means to raise money within the home.

The department has equipped a Household Science room in the school at Sussex sufficiently for forty students to enter the cooking classes. Thirty minutes are devoted each morning to talks on proper combinations and preparations of foods, the best cooking methods and the nutriment contained in various foods. Pupils are at leisure to ask questions and the most beneficial parts of the lectures are jotted down in the notebooks near at hand. Then follows the practical work, and it is a pleasing sight to see young, middle aged and elderly women, in their white aprons, busily engaged in preparing some savory and nutritious dish, which inevitably turns out a grand success, and you may be sure will be "tried again" at home, as each pupil receives a copy of all the recipes used during the entire course.

Owing to the many compliments coming their way, the students of the cooking class invited the pupils of the other classes and the members of the

Worms Make Children Peevish

Some symptoms of worms are: Deranged stomach, swollen upper lip, sour tongue, offensive breath, hard and full belly, with occasional gripings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short, dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever. If you have the least suspicion that your child is troubled with stomach worms or pinworms, don't hesitate—get a bottle of Dr. True's Elixir. This remedy has been on the market over 60 years. Put your child on the way to good health by using Dr. True's Elixir, the Family Laxative and Worm Expelled. Good for adults also. At dealers', 35c, 50c and $1. Advice free.

Trade Mark

Knowlton, Que. Dr. True

Sussex Women's Institute, which by the way has a paid membership of sixty-four to Five O'Clock Tea the first Saturday of the opening course. Garbed in their best regalia, the students served daintily prepared refreshments to their many guests. Altogether it was a pretty sight to see the tables, decorated with pink and white carnations, and the students serving, in accompaniment to the strains of music ably rendered by the Sussex Ladies' Orchestra.

Prizes are given in each class and it was both amusing and interesting to see with what effort the pupils of the Home Nursing and Sewing Classes tried to obtain full notes and to do their work to the satisfaction of the teacher. Each student has to properly make a bed for a patient, change the bed linen, and by demonstration show how to bathe, dress and turn a helpless sick person. And this is only a "wee sma" note" on the helpfulness of the many lectures on Home Nursing.

Several useful and pretty articles were sewn "by hand" at the Sewing clases, and although we would not do away with the sewing machine, there was close competition between Mr. Machine and Miss Student as to neatness of the finished article. Also, the knitting needles may have worked slowly and several stitches may have been dropped in work by beginners in the Knitting class, yet before the first course colsed, needles worked much faster and the teacher was led to believe that there were some Women's Institutes in New Brunswick whose yield in the knitting line would be greater than ever before the dawn of spring.

It would never do to conclude these remarks about this beneficial course which is available to every woman and girl in the province, without mentioning the prize-winners in the various classes and the successful event held the closing evening of the first course.

The Department of Agriculture has made it possible for a student to win as much as $20.00 at each course, and we announce with much pelasure the winners for the first course.

Five dollars to Mrs. Frank Daughney, of Dalhousie Junction, for best work in Handicraft; $5.00 to Miss Ethel Davis, of Sussex, for highest mark in written examination on "Theory in Cooking"; $5.00 to Mrs. William Howard, of Sussex, for neatest work in sewing contest; and $5.00 to Miss Elizabeth Howard, of Sussex, for highest mark received in written examination on Home Nursing.

With the aid of the students, the members of the Sussex Women's Institute brought to a close the first course by means of a Patriotic Concert, last Friday evening. The Assembly Hall of the Agricultural School was literally packed and much pleasure was derived from the vocal and instrumental solos, readings and selections from the Sussex Ladies' Orchestra. Honorable James A. Murray, Minister of Agriculture, acted as chairman and congratulated this branch for having raised during the past year something over twelve hundred dollars for patriotic purposes. It meant some difficulty in serving refreshments to so many people asembled, but before the time arrived for "God Save the King" each person was served to a cup of coffee, a sandwich and a piece of cake. On the whole, the women of the Institute are to be congratulated for having cleared over Fifty-five dollars from twenty-cent admissions, this money to further assist in the noble work being done by this energetic branch.

February 25th completes the courses at Sussex, and indications are brighter

Seeds with a Pedigree mean Money-making Crops

THE first step to intensive farming is to use only *tested seeds* of the best quality, and of varieties especially bred for Canadian climatic conditions. No amount of care in cultivation will produce big yields from inferior seeds. *It is now forty years since*

McDonald's TESTED SEEDS TRUE-VIGOROUS-RELIABLE

were first supplied to Canadian farmers and gardeners. For nearly half a century, season after season, they have been producing money-making crops for those who use them. They have an honest reputation for strong, vigorous germination, and for producing hardy, healthy plants. McDONALD'S Tested Seeds are of strong, pedigreed strains, especially selected for Canadian climatic conditions, and are subjected to rigid tests before being approved for sale.

Get bigger yields per acre by using McDONALD'S Tested Seeds

Hundreds of varieties of field, garden and flower seeds illustrated and described in McDONALD'S Seed Annual. 100 pages, full of valuable information for the farmer or gardner. Write now for your copy, it is free.

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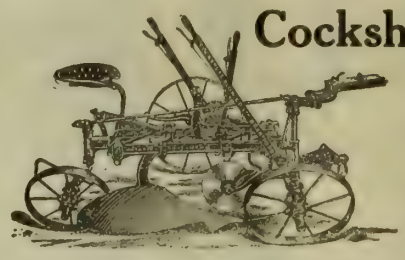
Take Advantage of Frost & Wood Service

Every Frost & Wood dealer is trained to give you the best possible advice on what implements to buy, when to use them, how to use them. Much of our success has been due to the intelligent advice our agents give to our customers. Look up the Frost & Wood agent in your neighborhood. He is a good man to know.

Cockshutt Footlift Sulky



Here's a Plow that a boy can do a man's work with, it's so easy to use. A slight pressure on the foot lever brings the mould board out of the furrow or sets it to work again. Or you can set it to rise automatically if working in rough ground. It's a pleasure to use the Footlift Sulky—it gives uniform plowing in any kind of soil, meaning uniform growth and ripening of crops. Fitted with either wide or narrow bottoms, and either Knife Colter, Rolling Colter or Jointer, as desired.

Beaver Gang Plow

Three horses and a half-grown boy can do more and better plowing with this light-draft Gang than two good men with four horses and two walking plows. There's your chance to make money! The levers are very easy to operate, and they give absolute control of your plow and its work on up-and-down or stubborn ground. A perfect giant for strength. Supplied in various bottoms, also with Knife or Rolling Colter or Jointer as desired. Learn more about this splendid implement.

The big, complete Frost & Wood line of "quality implements" is ready to help any farmer make more money, get better crops and with less labor.

Binders,	**Cultivators,**	**Mowers and Rakes,**
Plows,	**Disc Harrows,**	**Corn Planters,**
Drills,	**Engines,**	**Manure Spreaders.**

For pamphlets and full information enquire of local Frost & Wood dealer or write our nearest address.

The Frost & Wood Co., Limited,

Montreal, SMITH'S FALLS, St. John, N. B.

A COLD
Settled On Her Lungs
Causing Great Pain.

THE CURE WAS

DR. WOOD'S
Norway Pine Syrup.

Miss D. M. Pickering, St. Catharines, Ont., writes: "Having derived great benefit from Dr. Wood's Norway Pine Syrup, I thought I would write and tell you of my experience. When I first came out from England I contracted a severe cold, owing to the change of climate. It settled on my lungs, and caused me a great deal of pain. I tried every remedy I could think of, but got no relief. My father, who had heard a great deal about the good qualities of Dr. Wood's Norway Pine Syrup, advised me to try it. I did so, and I am pleased to say, found immediate relief. I only took one bottle and it cured me completely. My mother had a severe cold also, and Dr. Wood's Norway Pine Syrup cured her, so we never fail to keep a bottle of it in the house."

See that none of those so-called "pine syrups" are handed out to you when you go to your druggist or dealer and ask for "Dr. Wood's." It is put up in a yellow wrapper; three pine trees the trade mark; price, 25c and 50c.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

for even larger classes at Woodstock. the first course beginning February 29th and closing March 10th, and the Agriculture to the women of the province, should result in an influx of applications from various points throughout the province.

HAZEL E. WINTER.
Supervisor.

Fruit Inspection in the Maritime Provinces.

Complying with your request I will endeavor to give the readers of the Maritime Farmer some little idea of the way fruit inspection under the Inspection and Sale Act, Part 9, is carried out in District No. 1 which comprises the Maritime Provinces of Canada.

Previous to 1913 the Inspection of exported fruit had been done at the shipping ports when it was being transferred from car to ship. This method was not satisfactory for the reason that when ships were loading there was a grand rush to get the cars unloaded as quickly as possible and the Inspector did what he could while the fruit was between the car and the ship's hold and if he found a barrel falsely marked, the chances were that all the other barrels belonging to the same lot weer by this time on board ship. And while the inspector has the right to hold shipments until he has completed his inspection he did not care to do so when the thermometer registered zero or below on the dock and there was danger of serious damage to fruit. During these years of inspection at the shipping port two inspectors were employed in the Annapolis Valley where the bulk of the fruit is grown. These inspectors travelled from place to place visiting fruit houses, giving instructions and incidentally notifying the inspectors at the docks when they had reason to believe that improperly packed fruit was being shipped, also from what place it was being shipped and the car number. This enables the men at the dock to more quickly discover poorly packed fruit. At present nearly all the inspection is done at the point of shipment, that is at the fruit house or orchard where the fruit is packed. Under our present system the fruit growing district is divided into sections. We have one hundred and ten large packing houses and each inspector is assigned a section embracing a number of these houses, and in the early part of the season he visits orchards where fruit is being packed.

These Inspectors are constantly on the move and visit all points in their section as often as possible. They inspect fruit anywhere they find it ready for market and forward their reports direct to the office of the Fruit Commissioner at Ottawa.

I may say that instruction is our strongest point. Inspectors act as instructors as well as detectives and we find that the percentage of growers who are dishonest when once they thoroughly understand how fruit should be packed, is very small.

The fact that fruit was never better or more honestly packed than it has been this year is a strong argument in favor of inspection at the point of shipment where instruction can be given to the men in the fruit packing houses.

For Hoarseness.

To cure hoarseness, beat up 2 fresh eggs, thicken them with sugar, add a little lemon juice or vinegar, and eat a little frequently; it will soon relieve. Another good remedy is to infuse a little finely scraped radish in a little water for 2 hours in a close vessel, and then add double its weight of sugar; take a tablespoonful at a dose and it will give speedy relief.

Dispersion Sale
March 15th

Owing to the Managing Director of this farm having gone to the front, it is found necessary to reduce our large stock.

On March 15th we will sell at Private Sale or Auction a number of Fine Holsteins and Ayrshires, all ages, male aud female.

Send for catalogue.

ROBERT KIDNEY, Manager.

CLOVER NOOK STOCK FARM,
Hartland. N. B.

ONE CENT A WORD

WHITE WYANDOTTES—Bred to lay and win. Eggs, $5 00, $3.00 and $2.00 per 13, according to quality.—CLARENCE FAWCETT, Sussex, N. B.

FOR SALE.—Five trios of Regal White Wyandottes, (Cockerel and Pullets), $5.00 per trio. Eggs for setting $2 00 per 15.—L.V. MATTHEWS, St. Mary's Ferry, N. B.

WANTED.—Man for general farm work, a good milker and one used to an axe. Must be clean, respectable and a good worker. Steady employment. Good home and food. Wages from twenty to thirty dollars per month, according to ability.—CHAS. R. PETERS, Elmhurst, Kings Co., N. B.

FOR SALE.—Now booking a few orders for Spring in the following eggs: Ring Necked Pheasants at $3 00 per doz.; Golden Pheasants at $7.00 per doz.; Lady Amheret Pheasants at $12.00 per doz; White Pekin Ducks at $3.00 per doz.; Colored Muskovey Ducks at $4 00 per doz; Black Cayuga Ducks at $ 400 per doz.; Wild Mallards at $4.00 per doz.; Wild Black Ducks at $4 00 per doz.; African Geese at $6.00 per doz.—JOHN T. GOODFELLOW, Chateauguay, Que.

McCormick

Oliver Plows

Try an Oliver Plow This Year

OLIVER plows for Eastern Canada are the result of the closest study of plowing conditions in Eastern Canadian fields. The point that interests you, of course, is whether or not you can get the plow that your conditions require. See the **McCormick** local agent and you will find that he has in stock or can get promptly, an **Oliver** that is exactly the plow for your work.

The **Oliver** plow line now includes walking plows, three-wheel sulkies, walking gangs, hillside plows, high and low-lift gangs. Among these, the **Oliver** 1-C sulky, 1-C gang and No. 26 sulky are prime favorites. In both of these plows most of the weight is carried on the two furrow wheels, which ride on a smooth surface all the time. This feature insures good plowing.

See the **McCormick** local agent or write to the nearest branch house, and we will see that you get full information about the **Oliver** plow that you can use to best advantage.

International Harvester Company of Canada, Ltd.

BRANCH HOUSES
At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton

The Lightning Cure for
BRONCHIAL COUGHS

Veno's Lightning Cough Cure puts scientific precision into the treatment of bronchial troubles—cures as surely as water quenches fire. Veno's is not a mere hap-hazard mixture of a number of ingredients, thrown together in the hope that one or two may prove effective. Veno's is all effective, an absolute specific. That is why it is the most successful cough remedy in the whole world.

Awarded Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

That medal was the hall mark of scientific approval—the highest award offered at the Exhibition. And Veno's Lightning Cough Cure won it as the purest, surest, speediest, and most thorough remedy of its class. Veno's is free from narcotics, free from poisons, and just as suitable for children as it is for grown up people. You can trust Veno's to cure—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness

Price **30** *cents.*

Difficult Breathing
Whooping Cough
Blood Spitting
Asthma

Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

Lump Jaw

The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in

Fleming's Vest-Pocket Veterinary Adviser

Most complete veterinary book ever printed to be given away. Durably bound, indexed and illustrated. Write us for a free copy.

FLEMING BROS., Chemists,
41 Church Street, Toronto, Ont.

A New Kind of School Needed.

(Continued from Page 313)

too patient! Feeling as old Omar the Tentmaker:

"Ah Love! Could thou and I with Fate conspire
To grasp this sorry scheme of things entire,
Would not we shatter it to bits—and then
Re-mould it nearer to the heart's desire!"

Which means that we must pray and work!

Boy's Competition in Swine Raising.

Rules and Regulations.

1. Open to boys of sixteen years and under, sons of farmers in each county in New Brunswick.

2. A boy on the farm may be the competitor, but only one in a family can enter the contest.

3. Each competitor must do all the practical work himself, but can receive advice and direction from parent or guardian.

4. Each boy entering the contest during the entire contest.
must attend, feed and care for the pig

5. Contest to begin at any time in the month of May and close when pig is five months old.

6. The breeds to be used in the contest must be pure-bred Yorkshire, Berkshire, Chester White or Tamworth, or grades from any of the named pure-bred males. Pigs must be bred upon the farm or purchased.

7. The Department of Agriculture offers three prizes to be competed for in each county and to be awarded for the largest, best fattened and best dressed pig, all the regulations specified to be complied with by the competitor.

8. Each competition to be under the supervision of an officer of the Department of Agriculture. He will have the right to visit the premises of competitor and to rule out any competitor from the competition at any time for any cause which he may deem sufficient.

Information as to the best method of feeding and caring for pigs will be supplied by the Livestock Division, Department of Agriculture, Fredericton, N.B., the inspector to judge and award the prizes according to merit from each county.

9. At the close of competition each competitor shall file with the inspector an estimate of cost of the production of the pig and shall also furnish the inspector with a declaration, signed by his parent or guardian, that all the conditions, rules and regulations of this competition have been faithfully complied with.

Prizes

First Prize	$10.00
Second Prize	7.00
Third Prize	5.00

To J. B. Daggett,
Secretary for Agriculture,
Fredericton, N.B.:

I, ...
hereby make application to the Department of Agriculture, to become a competitor in the Boys' Competition in Swine Raising for the County of.....
..... and I hereby agree to be governed by the rules and regulations of said contest to the best of my ability.

Signed .....

Address.....

Approved: (Parent or Guardian).

.....

Potatoes Cheaply Grown.

A recent boys' potato contest in Cheshire county, N. H., brought out some fine yields, despite the unfavorable season. Arthur Welcome of Chesterfield was the young man who captured first prize. He harvested at the rate of 532 bushels to the acre, which cost him 24 cents a bushel to produce. The following table gives the names of other boys with their commendable records in bushels to the acre:

Record Yields of Potatoes

Name	Yield.	Cost.
Arthur Welcome	532	24c
George Lehtinen	474	30c
P. Richardson	347	39c
Donald Hale	316	39c
Herman Hale,	302	42c
Herman Stearns	280	42c
Harold Averill	297	34c
Roland Goddard	285	41c
Richard Stearns	299	41c
Merle Cobleigh	276	40c

Of the 77 boys who planted potatoes in this county contest 26 had a yield above 200 bushels to the acre, 13 above 250, five above 300, two above 400, and one above 500. There were five boys whose crops average them less than 35 cents a bushel to grow.—N. E. Homestead.

SOWS KILLING THEIR YOUNG

What is the explanation of the killing or eating of their young by sows?

There are many reasons advanced, among them being a feverish condition induced by over or improper feeding. Corn in quantity is condemned on this account, while a flesh diet is said to excite an appetite for animal food, which is satisfied at the expense of the young ones. Thrist has also been adduced as a course, and it has been recommended that a supply of water be provided. Constipation and a feverish condition affect the brain, and the excitement attending parturition may add to the evil, and there is no doubt that the frenzied sow will often then snap at a pig, and yet prove a kind mother to the remainder later on. These, then ,are things to be guarded against, and altough they may not be the cure for a so-called vicious sow, attention to the state of the bowels and the general health during gestation, and particularly during its closing days, undoubtedly goes a long way towards preventing the trouble. Dead pigs should be removed immediately. Yet another cause—and probably a fruitful one—of a sow killing her young arises from their hurting her teats. The teeth of the youngsters are very sharp, and they are apt to use them, especially when the udders are "caked" and swollen. This leads to reprisals; the sow snaps at the offender, and if she hapens to catch him it is bad for the pig. To prevent this injury to the teats, some breeders take off the sharp little teeth with a pair of nippers. There is no cure for a really vicious sow, and, unless she has some special value, or there are extenuating circumstances to be plaeedd in her favor, the sow that has once eaten her young should not be bred from again, but should be promptly fattened out or sold for this purpose. No sow, at any rate, should ever be allowed a third opportunity of offending.

FREE--FREE--FREE

Two Weeks' Course in Agriculture

AT THE

Agricultural School, Woodstock, N.B.

MARCH 20th to APRIL 1st, 1916

The First Week will be devoted to Fertilizers, Soil Management, Insect Pests, Plant Diseases and Spraying.

The Second Week will be devoted to all classes of Live Stock and Field Crops.

The only expense to you will be Board while in Woodstock and Railway Fare at Reduced Rates. Purchase a Single First-class Ticket to Woodstock and get a Standard Certificate from the Ticket Agent.

A list of suitable Boarding Houses will be provided to Students.

Applications for enrolment in this course will be received up to March 18th, but should be sent in as early as possible. Send applications and inquiries for further information and full program to A. G. TURNEY, Fredericton, N. B.

NEW BRUNSWICK DEPARTMENT OF AGRICULTURE,
HON. J. A. MURRAY, Minister.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, MARCH 7, 1916. Number 11.

Experimental Orchard Work Season '15

By Prof. W. Saxby Blair.

The Nova Scotia Fruit Growers' Association is largely responsible for the establishment of the Experimental Station at Kentville, N.S. The need for such a station in this Valley was prominently set forth and championed by a limited number of enthusiastic individuals backed by this Association. Soon after the station was established it was found that as there were no established orchards for experimental work on the station farm it would be necessary in order to meet the present requirements of the fruit grower to secure orchards outside of the station for such work. To bring this about a special meeting of this Association was convened at Kentville in August, 1912, at which a petition was presented to the Honorable Minister of Agriculture for the Dominion, Mr. Burrill, asking that money be granted for such work. The assurance was given by Mr. Burrell that the petition would receive every consideration. The matter later received the sanction and support of the federal representatives from the Valley and the necessary money for this work has been furnished. This in brief is the history of the establishment of the Experimental Orchard Work which has been conducted under my supervision as a part of our Experimental Station work during the past three seasons.

It was found to be difficult to secure satisfactory orchards for extensive comparative tests owing to lack of uniformity in trees and a mixture of many varieties, and the orchards selected were not all that was desired, but they were as good as could be found at that time. I want to say that in the location of these orchards for our experimental work I am entirely responsible and the orchards selected were those where I thought the best work could be done, and if I have lacked in judgment in the matter I am to blame and not others, and am prepared to take all the responsibility.

The work conducted in 1913 under this appropriation is now printed and will be found in the Horticultural Division of the Experimental Farm report for the year ending March 31st, 1914. The 1914 work is not yet issued but will be found in the report of the Horticultural Division of the Experimental Farm report for the year ending March 31st, 1915. You, however, have had an opportunity to study the work conducted during the period mentioned in the report of this Association which have in part printed the results of our work. The 1915 work I will outline briefly for you today and the results will appear in the report more in detail. Our experiments have been confined principally to apple scab control and the matter contained in this address covers these experiments only.

I am indebted to my assistant, Mr. R. D. L. Bligh, for the records secured at Berwick and Falmouth, and to Mr. M. P. Pike for the records obtained at Bridgetown.

We have made every effort to avoid error in the work and have duplicated the experiments at each orchard as much as possible.

In considering these results it should be kept in mind that we depend entirely upon the hydrometer test in making our lime sulphur sprays. Were all brands of commercial concentrated lime-sulphur of the same density this would be unnecessary, but there may be a variation in density of from 1.26 to 1.30 in this product in which case a gallon of the 1.26 specific gravity concentrate is added to 40 gallons would give a much weaker spray than if one gallon of the 1.30 specific gravity concentrate is added to 40 gallons. The method to follow is to first test the concentrate one is using.

We were using the Grasselli concentrated lime-sulphur which gave a 1.30 specific gravity test. In order to find out the dilution required for a spray of 1.008 density the decimal of this spray is divided by the decimal of the concentrate thus: (1).300 ÷ (1).008= 37½ gallons, or 1 gallon should be diluted to make 37½ gallons of spray. If a concentrate has 1.26 specific gravity test and a 1.008 spray is desired you should proceed as follows: (1).260 ÷(1).008=32½ gallons of spray, or 1 gallon should be diluted to make 32½ gallons of spray. Any reference made as to the dilution in this address is based on the specific gravity test of the Grasselli concentrated lime-sulphur.

The approximate date of fall bloom at the different orchards was as follows:

Variety	Bridgetown	Berwick	Falmouth
Gravenstein	June 4	June 3	June 6
Golden Russet	June 6	June 8	June 10
Kings	June 6	June 6	June 8
Baldwin	June 9	June 8	
Blenheim	June 7	June 8	
Stark	June 6	June 8	
Ben Davis	June 10	June 10	
Ribston	June 6	June 6	June 8
Nonpariel	June 8		
Spy	June 10	June 10	June 12

The dates of application have varied somewhat at the different orchards, but in all comparative tests the sprays were applied on the same days. In the majority of the tests two sprays were put on before the blossoms and two after.

It is interesting to note that from the 15th May when first spraying work at Berwick started, there was more or less sunshine every day to the end of the month except on the 16th, 18th, 22nd and 28th. Rain fell the 15th, 16th, 18th, 19th, 22nd, 23rd, 24th, 27th, and 29th. The total precipitation, however, was only .85 inches of which .42 fell on the night of the 19th and 27th. It will be seen therefore that the weather to June 1st was fairly favorable for scab development. From

(Continued on Page 445).

VALUE OF DORMANT SPRAY

Place where test made, and variety.	Time of Application					Per Cent Scab.
BERWICK	April 26	May 17	June 1	June 15	July 2	
Gravenstein	1.014	1.008	1.008	1.008	1.008	12.4
Gravenstein		1.008	1.008	1.008	1.008	16.2
Not sprayed						91.
Ben Davis	1.014	1.008	1.008	1.008	1.008	3.7
Ben Davis		1.008	1.008	1.008	1.008	4.5
Not sprayed						75.3
			May 31	June 14	July 1	
King	1.032	1.008	1.008	1.008	1.008	2.1
King	1.014	1.008	1.008	1.008	1.008	.3
King	1.008	1.008	1.008	1.008	1.008	2.3
King		1.008	1.008	1.008	1.008	7.7
Not sprayed						92.8
	April 27					
Gravenstein	1.032	1.008	1.008	1.008	1.008	6.1
Gravenstein	1.014	1.008	1.008	1.008	1.008	4.5
Gravenstein	1.008	1.008	1.008	1.008	1.008	8.4
Gravenstein		1.008	1.008	1.008	1.008	10.1
Not sprayed						87.4
BRIDGETOWN	April 27	May 17	May 28	June 15	June 25	
Gravenstein	1.028	1.008	1.008	1.008	1.008	8.
Gravenstein		1.008	1.008	1.008	1.008	21.
Gravenstein		1.010	1.008	1.008	1.008	11.
Not sprayed						98.
		May 18	May 28	June 15	June 26	
Gravenstein	1.028	1.008	1.008	1.008	1.008	8.5
Gravenstein		1.008	1.008	1.008	1.008	36.
Not sprayed						93.2
	April 28	May 18	May 28	June 15	June 26	
King	1.028	1.008	1.008	1.008	1.008	8.04
King		1.008	1.008	1.008	1.008	6.47
Not sprayed						57.18
Ben Davis	1.028	1.008	1.008	1.008	1.008	6.83
Ben Davis		1.008	1.008	1.008	1.008	8.07
Not sprayed						73.61
Nonpareil	1.028	1.008	1.008	1.008	1.008	3.77
Nonpariel		1.008	1.008	1.008	1.008	3.44
Not sprayed						42.
Stark	1.028	1.008	1.008	1.008	1.008	6.77
Stark		1.008	1.008	1.008	1.008	8.62
Not sprayed						62.71
BERWICK		May 19	June 8	June 18	July 1	
Spy		1.014	1.008	1.008	1.008	3.6
Spy		1.009	1.008	1.008	1.008	3.55
Spy		1.008	1.008	1.008	1.008	4.47
Spy		1.007	1.008	1.008	1.008	4.29
Not sprayed						95.2

DORMANT VS. NO DORMANT

Number of Experiments	Summary	Per cent Scab
2	Dormant spray 1.032 sp. gr., or 1 to 9½ gals. and 4 sprays 1.008.....	4.1
6	Dormant spray 1.028 sp. gr., or 1 to 10½ gals. and 4 sprays 1.008.....	7.4
4	Dormant spray 1.014 sp. gr., or 1 to 21 gals. and 4 sprays 1.008.....	5.2
2	Dormant spray 1.008 sp. gr., or 1 to 37 gals. and 4 sprays 1.008.....	5.3
9	No Dormant spray. and 4 sprays 1.008.....	7.13
11	No spray.	78.95

Different Strengths in the First Foliage Spray

1	First foliage spray 1.010 sp. gr., 1 to 21 gals. and 3 sprays 1.008.....	3.6
1	First foliage spray 1.014 sp. gr., 1 to 30 gals. and 3 sprays 1.008.....	11.
1	First foliage spray 1.009 sp. gr., 1 to 33 gals. and 3 sprays 1.008.....	3.5
1	First foliage spray 1.008 sp. gr., 1 to 37 gals. and 3 sprays 1.008.....	9.5
1	First foliage spray 1.007 sp. gr., 1 to 43 gals. and 3 sprays 1.008.....	4.9
	Average of above five sprays	6.5
7	No first foliage spray. and 3 sprays 1.008.....	13.94
11	No spray.	78.95

N. B. Farmers and Dairymen in Annual Convention

The fortieth annual convention of the New Brunswick Farmers' and Dairymen's Association was held in the council chamber, Fredericton, on February 28th, 29th, March 1st and 2nd.

J. T. Prescott, president of the association, occupied the chair and conducted the business of the various sessions with dignity and dispatch.

It was thought that owing to the date of the opening of the Legislature being postponed that the attendance at the convention would not be so large as in other years, as not a few farmers like to come to Fredericton when the House is in session and get an insight into how the business is conducted. The tendency therefore in past years was that although there would be a large representation of farmers in the city during convention week, the attendance at the meetings would be rather small.

The various sessions this year saw the best and most interested attendance in the history of the association and proves conclusively that farmers can be just as much interested in their own parliament as in the parliament of politicians. It also proves that the holding of the association meetings concurrently with the opening of the Provincial Legislature is not in the best interests of the association.

The President's Address

Fellow-members of the Farmers' & Dairymen's Association of New Brunswick, the Minister of Agriculture of New Brunswick, the Mayor and City Council of the City of Fredericton, and Gentlemen:

With very great pleasure we welcome you to this, the 40th annual asembling of our Farmers' Parliament.

We had hoped to be privileged to open this session with the knowledge that our great Empire and her Allies had accomplished the task forced upon them more than eighteen months ago. We are obliged to admit, however, that the toll of blood and money yet to be sacrificed to the god of militarism will be appalling before a victory full and complete is realized. Indeed, with more than three-quarters of what have been regarded as the most highly civilized, progressive and intelligent nations of the earth engaged in the struggle, and a very considerable portion of the remainder in an unsettled condition, only the predictions of the most astute military expert, as to the probable termination of this awful carnage is worthy of consideration. Most highly civilized, did I say? Germany prefers the term cultured; and well it is she does so, for to speak of civilized Germany after her rampage through heroic little Belgium would be suburb irony. Some months ago, in our moving pictures houses, a picture entitled "Quo Vadis" was exhibited portraying the acts of the wicked emperor Nero and his satillites some two thousand years ago. Thenceforth was this being characterized as the most wicked, profane, sensual, lewd, and carnal of all humanity. We ask you, is the picture any more abhorrent than that of the march of the Hun through the little state just mentioned? No, a thousand times no. Super Nero and his salellites have the old Roman beaten blocks. So let us bend our energies that the complete collapse of his Empire, his ideals and his teachings shall be brought about with all possible despatch.

In tendering our sympathies to our honored Premier, and our hope for a rapid and complete recovery from his illness, we are confident that we voice the feelings of not only our asociation, but those of the population of the entire province. We enjoyed his presence and his address at our last session, and had hoped to have him with us again this year.

To be deprived of the privilege of witnessing the ceremonies in connection with the opening of the Provincial Legislature will, no doubt, be a disappointment to many, and is to be regretted, as they are invariably inspiring and full of patriotism.

The address of the Lieutenant-Governor, with its succinct history of matters affecting the various operations of our Government during the year and of future undertakings contemplated which is educational and intensely interesting to the thoughtful farmer, on a vacation, will be much missed; as will also the privilege of meeting the representatives and perchance of witnessing them in action on the floors of the house.

However, our own little Parliament should be the gainer, and we hope it may.

Right here, I crave the privilege of saying a few words of regret at the loss sustained by the various farmers' organizations throughout the Maritime Provinces in the removal of Col. H. M. Campbell from his regular vocation.

Of gentlemanly address, distinct in speech, of strict integrity, thoroughly impartial, conversant with the rules of debate, he made an ideal presiding officer, and we predict that his qualifications for protecting and advancing the interests of the farmers of this province will with difficulty be duplicated.

I feel satisfied you all join me in wishing him success in his new sphere of action, and that with his estimable family he may be spared to return among us blessed with his usual health and strength.

Thus we chronicle our disappointments and regrets.

Being beyond our control, our interest wanes, and to the future we turn, philosophically, perhaps selfishly, to consider our interests, to satisfy our lust for power, to discern opportunities for control. Thus it becomes my duty as presiding officer of your association to bring to your notice problems demanding, it seems to me, your earnest attention.

This being a matter of opinion, errors of omission and commission, I presume, are pardonable.

In the order of their merit, as they appeal to us, we propose to make brief reference to the issues and problems most vitally affecting our fellow farmers of this province.

Uppermost in our minds comes the question of the prohibition of the liquor traffic.

Up to a few short months ago the progress made toward a satisfactory solution of this problem had been altogether too slow for enthusiasts, and, we believe, for the greatest good of our nation; but in the good old Anglo-Saxon way, it has been sure. Fiery invective, woeful picture-painting, denunciation, and much of argumentation, the weapons of warfare up to perhaps ten years ago, are, we believe, not required in the present day campaign. In fact, it is our opinion that campaign work as it used to be carried on is about done except what will be required in the settlement by ballot.

We hope and believe that our representatives will have seen with ourselves the advanced sentiment on this question, and will provide the opportunity anticipated for a settlement.

This may sound too optimistic, but to those who have had the cause of Prohibition at heart for thirty or forty years there appears a monstrous rift in the dark cloud that formerly presented itself on occasions devoted to the discussion of this great question

The results derived from the banishment by the Czar of Russian of the trade in intoxicating liquor within his Dominions are of sufficient magnitude to convince the most sceptical as to the marvellous increase in the efficiency of all the attributes that characterize a nation as physically, mentally and morally strong. Think of it. Just nicely recovered from defeat by a nation greatly her inferior in point of numbers and physical stamina, within a year from the banishment of their national beverage, vodka, and for eighteen months engaged in the most colosal war of all time, physicians testify to the health, financiers of the wealth, and priests to the character of Russia, as never so great in the history of the nation. Other peoples hitherto considered superior in intelligence, character, industry, education and wisdom are forced to follow the lead of Russia in the abolition of a habit that will mark a sublime era in the history of nations. Unpopular as is monarchial government, the edict of the Czar of Russia will cut a deep niche in its hall of fame. Its influence is already wonderfully extensive, and is making history in many places.

The action of the Synod of the Church of England recently taken at its meeting in this city makes worthy history.

I have not the honor of the acquaintance of the esteemed head of the church in this province, but I have been fortunate in being able to be present at some of his addresses, and I am free to confess I was not astonished at his action on the question of Prohibition. I believe he has impressed the people of this province with his noble ideals and fearless character and predict that the moral and spiritual growth, due to his influence, will be very great.

Farm labor is a problem that is engaging the attention of many agriculturists.

For a number of years the competition between the captains of various industries other than farming and the agriculturists has been very keen. As a result of this scarcity and also the great disproportion in the hours of labor necessary for the securing of competence between the learned professions and artisans on the one hand and the farmer on the other, the common laborer is master of the situation.

Of the one hundred and sixty-eight hours in a week, the legal gentleman works from thirty to thirty-five; artizans work from forty-eight to fifty-four; common laborers work from sixty; farmers' laborers from seventy-six to ninety-two. In the opinion of many this circumstance is bound to become a most serious handicap to the important branch of dairying. Unless to the various operations applied to the manufacture of dairy products that are now performed by the cow; in which case the difficulties machinery is added that of milking in the solution of the problem will be materially lessened.

This dissatisfaction is caused by the great disproportion in the hours of agriculturists to become a prime factor in the formation of unions of agriculturists.

Already the Western and Upper Provinces of the Dominion have become enthused, and the spirit of union has assumed undreamed of proportions, resulting no doubt, from the progress reported and the benefits accruing to those in the membership of the organizations.

A start in a small way has been made in this province, and results extremely satisfactory have been obtained.

While no great fault can be found with our law makers, yet in none of our legislative halls is the representation of the tillers of the soil up to the proportion to which the importance of their calling entitles them. And we assert the fault lies at their own door.

The question of recruiting from the ranks of farm laborers to assist in the great struggle in Europe has attained sufficient importance of late to warrant some comment.

In the early stages the Imperial military authorities made a call for men. The heroes of our little nation have responded nobly, and viliantly they have fought we are told. They have earned the gratitude of the Mother Country, and from all reports it is given in full measure. For bravery, coolness, nerve and brawn we are told they have no superior in Europe. And we are not surprised. Some have fallen. We sympathize with those who mourn. More than once have we been saddened. The loss of such heroes to any country seems almost beyond recompense. More still are wanted and more still are going. We have no serious criticism to make except to offer a word of caution as to the class from which recruits are drawn. Perhaps you may count it selfish, but far be it from me to approach the subject from such a standpoint.

For some time we have been observing the depletion of farm labor—never any too plentiful—these last few years, and now with this added solicitation and to the adventurous young men somewhat attractive inducements, it seems that over the gerater part of these eastern provinces, if the slogan of greater production is to be made capable of realization, a halt must be called and some means be taken to discover where the agriculturist is at.

Thoughtful observing, truthful citizens have preceded us in this warning which has been anticipated. One of the most clever and observing patriotic correspondent of the agricultural press has within the last two months written several articles on it. The last issue of one of the oldest and best farm journals on this continent, has an article on the subject full of suggestions.

We feel we can safely state that a good average crop was harvested in the year just passed in all products with the exception of potatoes, turnips and fruit, for which we return thanks to the giver of all things.

We wish to recognize the deep spirit of interestedness manifested toward our business both by the Federal and Provincial administrations. We are confident that the head of our Department of Agriculture in this province will do all things in his power to elevate the calling and advance the interests of those engaged in the different branches of agriculture. The many advantages acquired for improvement in all lines of our calling during the last few years prove that this department has been full of energy.

A short reference to the subject of good roads and we are done. It would seem to us that an advance in the matter of good roads might well be planned by our Provincial Government. We realize that this is an era of economy and that any scheme which draws heavily on the exchequer is out of the question. But we submit that the road law of this province can very easily be improved upon, and a scheme whereby a campaign of education calculated to enlighten the people on the subject and prepare the way for the adoption of an impoved system in the near future is in order.

In the city of Toronto during the second week of this present month a conference of county road superintendents was held which cannot help but be of great benefit to the entire province of Ontario. Many more subjects

that are worthy of discussion present themselves, but the committee on resolutions will be at liberty to bring them before you for discussion. We wish to emphasize the importance of the members of this association taking part in the discussions. It is our farmers' parliament, and it is the stated wish of the Department of Agriculture that the utmost freedom for such discussion be allowed. We ask your kind asistance in the performance of the duties devolving on all the officers of the association and trust the session will be profitable to all, permeated with a spirit of harmony and good will, and that although we have made mention of dark clouds, they have a silver lining and is but necessary to "turn them inisde out till the boys come home."

Address of Welcome

His Worship Mayor Mitchell of Fredericton, formally welcomed the delegates to his city and the reply thereto was made by A. G. Dickson, vice-president of the Association. Mr. Dickson said the object of the farmers parliament was to acquire more knowl edge in order to make our calling in life a success. He also referred to the beneficial effect of the exchange of ideas between practical farmers. He put forth a plea for greater effort in crop production during 1916 than we have ever done in the past and thus do our bit in keeping up the very necessary war munition—food for the brave empire guardians.

In the absence of Hon. Jas. A. Murray, Minister of Agriculture, who purposed being present, but was hurriedly called to Ottawa on departmental business, Mr. Daggett, Secretary for Agriculture, expressed the Minister's regrets at not being present. Mr. Daggett also referred to the various numbers on the programme and strongly urged that the various subjects be thoroughly discussed. He called particular attention in this respect to the addresses on Potato Growing.

The Vice-Presidents' Reports

from the various counties were then received and taken as a whole were the best reports ever presented at the Association. These reports will be published later in our columns.

Prior to the closing of the Monday evening session the president named the following committees:

Resolution Committee—A. G. Dickson, M. A. MacLeod, A. J. Gaudie, J. A. Bernier and J. Anderson.

Audit Committee—Geo. J. Dickson, Isaac Baird and Thos. Harding.

Tuesday Morning

The Tuesday morning session was devoted to addresses and discussions on Potato Growing. Two excellent addresses were delivered by G. C. Cunningham, Dominion Plant Pathologist, and Dr. W. J. Morse, of Maine State Experiment Station. How to increase the average yield by careful attention to the question of keeping the common potato diseases in check as well as a strong emphasis on the question of good seed, was the thread of both addresses. Lester Wood, of Kings county, read an excellent paper on potato growing from the standpoint of the small grower, who does not have the acreage nor facilities employed by the larger growers.

Valuable discussions followed the various addersses and all three of the speakers proved that they had a good grasp of their respective subjects. Mr. Wood has recently expressed his views on potato growing in the columns of the Maritime Farmer. Eextracts from the other addresses will appear later.

Tuesday Afternoon

The first number on Tuesday afternoon's programme was the subject of "Production and Marketing of Farm Produce," by H. H. Smith of Hoyt Station, and W. H. Moore, Scotch Lake. Mr. Smith expressed himself very emphatically in favor of diversified farming. He believes in putting everything on the market as the finished product and as direct to the consumer as possible. He outlined his system of onion, strawberry, cabbage, rhubarb, and other garden truck growing. He also gave some valuable recipes for putting the various products in the most finished form.

Mr. Moore laid special emphasis on quality goods put up in attractive packages and humorously related his experiences in bringing his produce to market by automobile. He being the first farmer to introduce this innovation in the Fredericton market. The idea is working well and there is more call for his produce than he can supply, quality and attractiveness are winners in his case.

Dr. Morse, who gave a short talk on powdery scab, said he did not consider this pest as serious as was at first anticipated.

Geo. H. Barr, chief of the Dairy Division, Ottawa, addressed the meeting on "How to Widen the Margin of Profit in Dairy Production." As a means to this end he put quality and attractive package ahead of everything. He told of the rapid progress that is being made in the production of quality dairy produce by the Western Provinces, also by Nova Scotia and Prince Edward Island. He advised the farmers of New Brunswick to awake and do their utmost for the production of a class of goods that will hold the market for them against all comers. At the present time he said there was less being done along this line in New Brunswick than in any other province of Canada. He advocated more up-to-date creameries and equipment, and that prospective cheese and butter makers be given facilities whereby they may qualify to become as efficient in their calling as may be.

C. W. McDougall emphasized the value of cream grading and paying according to grade and quality.

Harry Mitchell was present and took part in the discussions. He also read a resolution passed at a recent meeting of the Prince Edward Island Dairymen's Association asking their government to co-operate with the government of Nova Scotia re the establishment of an up-to-date Maritime Dairy School in connection with the Nova Scotia Agricultural College, Truro.

Mr. Barr explained the working of the Dairy Act and in reply to questions gave reasons why cream tests vary.

On Tuesday Evening

Mr. McAllister, Maritime Secretary of the Y. M. C. A., appeared before the convention and explained the aims and objects of the Y. M. C. A. in the military camps. The talk was well received and before the convention closed a subscription list amounting to a considerable sum was made up for the furtherance of Y. M. C. A. work.

Mr. Barr continued his talk on Dairying. He laid special emphasis on the cow testing work, advocating better feeding systems and gave instances where herd production had been more than doubled by following those methods in less than five years. He strongly advised farmers to have nothing to do with breeders of pure bred scrubs—put them out of business by not patronizing them. Buy only the bulls that have records behind them. It is expensive for one farmer to buy such a bull, but let him combine with neighbors and establish something along the line of community breeding.

On Wednesday Morning

E. D. Eddy, Chief Dominion Seed Inspector, delivered an excellent address on the seed situation.

S. J. Moore referred to the growth of the Provincial Seed Fair and the excellent showing of small seeds.

Prof. Cunningham talked on the eradication of club root in tnrnips along the same lines as reported in a recent issue dealing with this subject before the Nova Scotia Farmers' Association. He showed conclusive proof that liming the soil heavily and carrying on an intelligent system of crop rotation would eradicate this disease.

John Wood, the drainage machine operator for the province, gave an interesting and instructive talk on drainage and the operation of the government ditcher. His address was one of the "practical" kind and it so appealed to his hearers.

On Wednesday Afternoon

Mr. Wood continued his talk on Drainage and B. Leslie Emmerson gave an address on "Value of Potash in Commercial Fertilizers." He was plied with all kinds of questions on fertilizers and fertilizing ingredients in general and was equal to the occasion every time.

Resolutions

Resolved that the thanks of this Association be extended to the various speakers who so ably addressed us during the present convention.

* * *

Resolved that the N. B. F. & D. A. in convention asesmbled extend their thanks to the mayor and city council of Fredericton for the free use of the council chamber for the purpose of holding our meetings.

* * *

Resolved that the New Brunswick Framers' and Dairymen's Association endorse the movement for temperance reform and prohibition that is being carried on by the Dominion Temperance Alliance and kindred associations.

* * *

Whereas the farmers of New Brunswick feel the need of more advanced methods in farming and dairying,

And whereas the facilities for education along these lines are not equal to that of the Western Provinces, or even Nova Scotia,

And whereas the finances of the Maritime Provinces, individually, are inefficient to maintain educational institutions up to the standard of those in the Western Provinces.

Therefore, resolved: That the Farmers and Dairymen's Association in convention ask our Legislature to give us such assistance as will enable us to co-operate with the other Maritime Provinces in establishing a Maritime Dairy School in conjunction with the Nova Scotia Agricultural College at Truro, and maintaining and developing those institutions up to a standard second to none.

* * *

In deference to the large percentage of French speaking population in the Province of New Brunswick and to the large representation of said class attending this Association, we respectfully ask that at least one session of future N. B. F. & D. A. conventions be addressed by French speakers, so that these delegates may hear agricultural questions discussed in the language they best understand.

* * *

Resolved: That this convention memoralize the Minister of Agriculture to bring before the legislature a bill for the enactment of the following laws:

(a) That some such law be introduced into this province similar to that now existing in the province of Ontario known as the Drianage Act.

(b) That said Government take some action to enable the farmers to procure tile at a reasonable price either by bonusing the manufacturer or by getting reduced rates on the different railroads or both.

(c) That the Legislature take steps to further aid the farmers in underdrainage by enacting a law similar to that known in Ontario as the Provincial Aid to Drainage Act, which has been worked out so successfully since 1911.

* * *

At a later meeting a resolution asking the Government of Canada to remove the duty on comemrcial fertilizers in the unmixed state was carried.

The Wednesday Evening Meeting

was held in the Opera House, where a large audience was presided over by His Honor, Lieutenant-Governor Wood.

The meeting took the form of a conference on agricultural needs of the Empire at war. After the Lieutenant-Governor had addressed the meeting Col. P. A. Guthrie and Dr. C. C. James, Dominion agricultural commissioner, addressed the audience, the former re [illegible] fill up the ranks and the latter re the call for a greater effort to produce [illegible] men.

On Thursday Morning

the Association listened to an interesting address on "Lime as an Aid to Fertility" by Prof. M. Cumming. Prof. Cumming's address will appear in full in the next issue of The Maritime Farmer.

As soon as Prof. Cumming had completed his address the delegates wended their way to the railway station where they entrained for a visit to the Experimental Farm.

After the various farm buildings had been visited, Prof. Cumming gave a demonstration talk on horses. Prof. Barton, of McDonald College, delivered one of the most instructive talks on dairying and live stock ever listened to by a Maritime audience. Dinner was served at the farm. About 4 o'clock in the afternoon the delegates returned to the council chamber in the city where Mr. W. W. Hubbard read a paper on Farm Drainage.

Thursday evening

The election of officers resulted as follows:

President, Geo. E. Fisher, Chatham; vice-president, A. J. Gaudet, Memramcook; treasurer, H. H. Smith, Hoyt; recording secretary, Chas. W. Shaw, Hartland; corresponding secretary, A. R. Wetmore, Clifton.

County vice-presidents, Albert, J. R. Paisley, Beaver Brook; Carleton, Dr. McIntosh, Hartland; Charlotte, Stanley Wilson, Rolling Dam; Gloucester, S. Demnas, Grand Anse; Kent, Premilife Johnson, St. Paul; Kings, Leslie Wood, Carter's Point; Madawaska, G. A. Bernier, Edmundston; Northumberland, A. G. Dickson, Chatham; Queens, Isaac Baird, Chipman; Restigouche, John McKinnon, Eel River; St. John, Alex. Johnston, Upper Loch Lomond; Sunbury, H. L. Dibblee, Hoyt; Victoria, Donald Innes, Tobique; Westmorland, Frank Fawcett, Sackville; York, W. H. Moore, Scotch Lake.

R. P. Steeves, Director of Elementary Agricultural Education delivered a masterful address on "Elementary Agricultural Education in his usual convincing manner. His remarks were closely followed by the audience and will undoubtedly be the means of sperading the seed of this deservedly popular educational system to all parts of the province.

Prof. Barton followed with an address on "Swine Raising," illustrated by lantern slides, which was brim full of practical suggestions. Suggestions that where they put in parctice are bound to very materially swell the stock breeder's revenue.

Lack of space prevents the publication of a full report of the various addressesses in this issue. We will, however, publish extracts in future issues.

The fourth annual convention of the Association was the best and most interesting ever held by the New Brunswick farmers. Never have we seen the interest so keenly maintained to the end of the various sessions.

Votes of thanks were tendered to the retiring president, and to the various speakers who so ably assited to make the convention such a decided success.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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MARCH 7, 1916.

DATES OF ISSUE.

March 7-21
April 4-18
May 2-16
June 6-20

PATRONIZE PROGRESSIVE BREEDERS.

The day is past when any progressive dairyman is keeping a sire merely that his herd may continue to give milk. The sire is the logical beginning and source of herd improvement and for that reason we cannot afford to have a poor one.

A Biblical adage says: "By their fruits ye shall know them." A well recognized breeding law is summed up in the words "Like begets like." These truisms are the guide posts to the selection of sires that the farmers of the Maritime Provinces are gradually learning to follow.

As we pen these lines our thoughts revert to the various Maritime Province breeders of dairy cattle, whom we have personally known since the Maritime Farmer was first published over twenty years ago. We have known them all and have watched their breeding career with considerable interest.

As we know these breeders we can distinguish three main classes, viz.:

1. Those who have no special aim re winning at exhibitions or re making records in the dairy tests.

2. Those whose only aim is to try to win prizes at exhibitions, and, on account of publicity thus attained, sell their surplus stock.

3. Those wo do not lay stress on exhibition winnings but who pin their ideals on the cow that can produce milk of good quality and a lot of it in the dairy and under offical record tests, or who are striving for both show and record of performance fame.

Of the first class all we have to say, after closely observing their operations for many years, is that they never get anywhere. They may have some good producers in their herds and they may have individuals good enough to win at the fairs, but they are not ambitious enough to try.

For many years the breeders repersented in the second class made a brilliant showing at the fairs. Their surplus stock was in demand—they prospered for a time while farmers were short-sighted enough to buy on pedigree only. But with the change in the trend of public opinion re buying on the records of ancestry, a change came to the breeders of this class. The demand for their stock fell off and slowly but surely many of them have dropped from the zenith of their erstwhile glory until today we find not a few of them practically down and out so far as breeding operations are concerned. They could not give the farmers intelligent answers re the production of the various cows in their herds consequently the farmers refused to buy "a pig in a bag" so to speak.

The breeders of class three did not make very rapid progress at first but surely and steadily they gained ground. They kept faithful production records of the various cows in their herds and now they are reaping their well merited reward. The breeders who keep records of their stock are the only breeders who are doing any business worth while now-a-days. They are patronized by the farmers because when buying from them they can get the kind of information they want.

To patronize a breeder who does not keep records is suicidal to progress. You do not know what you are being offered. The chances are that you are buying pure-bred scrubs. The death knell of the scrub is being tolled in the Maritime Provinces. Help it to ring out the pure bred scrub as well.

Unquestionably there are some pure-bred dairy bulls that are less valuable from the point of view of influencing herd production than some grade bulls, but we do not advocate the use of animals of either of these classes. Today it is comparatively easy to ascertain the producing qualities of a pure-bred bull's immediate ancestors and no man should purchase a herd sire without doing so.

The pure-bred animal represents not a single life-time of breeding, but rather many generations of careful breeding and selection. Originally this pure-bred stock came from the best which its home land contained, and since that time the strain has been improved by generations of careful breeders.

The grade sire, on the other hand, represents at best but a very few generations of breeding and selection and for that reason he cannot be expected to transmit what good qualities he may have inherited with as much certainty as his pure-bred cousin.

With a good, registered sire and high grade heifers of the same breed a man can reasonably expect to improve his herd, but with a grade sire such improvement is impossible because there is no source from which better qaulities may be brought in.

THE COUNTRY SCHOOL.

In an address on "The Stability of Agriculture," before the recent meeting of the Association of Life Insurance Presidents, Senator Wadsworth of New York spoke first of those things which tend to increase the material prosperity of the farmer and standardize his business on a firm foundation. He calls this the dollars and cents side of the question, but he believes that to increase the stability of agriculture great emphasis should be placed on the kind of education given by our country schools. In concluding his address he said:

"People living in the country are not very content simply with accumulating a savings account and paying off their mortgages. They think very deeply about the future of their children and they are intensely ambitious that these children shall receive the best obtainable education. They cannot help recognizing that the educational facilities of the cities, and by that I mean particularly what might be called the routine education, are vastly superior to the facilities of the country. When they make this comparison they no longer have that implicit faith in the old fashioned country school house. They want something bigger and better and more attractive from many standpoints, social and educational, for their children. They know that the country school is, generally speaking, the same old country school and that in many respects it does not respond to their desire for progress; it does not fulfill their aspirations for their children. And as many a farmer whose children have reached school age and many a country boy or girl anxious to develop themselves through education, tear themselves from old associations and move to the city where they are confident they can enjoy the facilities which they desire.

"I think this comparative failure of the country school to keep up with the educational procession has more to do with the movement from the country to the city than any other one element; and I, for one rejoice that there has recently been inaugurated a movement in several states, echoes of which are heard in Washington for the modernizing of the country school. I think we can all ecntre a goodly share of our efforts in support of this movement. In the natural course of events, life in the country has been brightened remarkably. The improved road, the rural delivery, the almost universal use of the telephone, and the astonishing use of the automobile are some of the important factors which have helped to bring this about. But none of these facilities, valuable as they are, affect the lives of people living in the country as fundamentally as the school. The man who lives in an environment which offers but comparatively meager possibilities for the development of his mind knows instinctively that he is missing something of deep and vital importance in his life; and the yearnings of human nature in this direction are so intense that the man will inevitably seek a more favorable environment for himself and his children; and no amount of effort put forth to enable him to fill his pockets with money will drive that yearning from his soul.

"I verily believe that the next great organized effort for the advancement of agriculture and the preservation of a thriving and contented country population must be directed toward the upbuilding of the country school. Work of this sort is in line with the highest purpose of government and upon its successful accomplishment must rest the continued success of our wonderful experiment in democracy."

Dr. C. C. James, in his address at the opening of the new Domestic Science Building on the N. S. A. C. campus at Truro, sounded practically the same sentiment expressed in the foregoing paragraphs.

Read Prof. McCready's address at the Susssex Short Courses in the last two issues of the Maritime Farmer.

Don't forget the Short Courses to be held in the Agricultural School, Woodstock, N.B., from March 20th to April 1st. "Time and money well spent" is the unanimous verdict of the farmer or farmer's son who has ever attended a short course in agriculture. The course will practically revive you to a greater sense of the importance of your calling. Time and again you will be able to put in practice some of the short cut ideas set forth by the instructors and your fellow students at these courses. "Come with us and we will do you good," is a very applicable expression when talking short courses.

Experimental Orchard Work Season '15

(Continued from Page 341).

the 1st to the 6th June inclusive the weather was unusually bright and unfavorable for scab development and favorable for blossoming. This was followed by dark weather on the 7th, 8th and 9th, with fairly bright weather on the 10th and 11th. Rain fell on four days following the 8th which amounted to 1.01 inches, over half of which fell on the 9th, when blossoms were at their best, after which they soon disappeared. It will be seen that the time during latter part of the blooming period was particularly favorable for scab development. The next two weeks following the 11th June was more or less dark with rain on eight days.

It is interesting to note that the greatest foliage injury occurred when rain and dark weather followed the application of the spray, and also that the soluble sulpuhr plots showing the greatest per cent of scab were these which had a rather sharp fall of rain the day following the application which would seem to indicate that soluble sulphur is less adhesive than lime-sulphur.

The orchards used are fairly well matured and three trees have been used to each experiment. The aim has been to make comparative tests with trees which have been developed under apparently similar conditions and adjoining each other, and for this reason there may be some difference in the results from the same spray on the different series of plots. In every case the product of the plot has been carefully sorted and the percentage of slight, medium and bad scab obtained. In many cases the per cent of scab was only slight which fact is not shown in the total per cent. here given. It has been noticed that polts adjoining the check plots often show a decidedly high per cent of scab, and this is what we might expect. Plots for a check, however, left unsprayed are necessary in order to check up the work.

Dormant vs. No Dormant Spray.

Experiments were continued this season to get further information as to the value of the dormant spray put on before the buds open to control scab. Different strengths of lime sulphur were used in these early sprays and the results would seem to show some gain although the gain is not sufficient to make this a necessary spray. It will be noticed that the percent of scab from nine plots is 7.13 per cent. and that this does ont include two plots at Bridgetown where there was 36 and 21 per cent of scab. These two plots were high in scab owing to being adjacent to a plot not sprayed which resulted in a light late infection and were these included the average would be 11.51 per cent scab on the plots receiving other than the dormant spray.

It will also be noticed that tests have been made with various strengths of lime sulphur for the first spray and the three following sprays similar. It would appear from this that there is no advantage in using a strength greater than that generally used for this spray. The plot where the 1.010 strength was used also adjacent a check plot and the high per cent of scab in it can in this way be accounted for. The results would seem to confirm previous experiments that the dormant spray is of little value and that a strength of spray greater than 1.008 is unnecessary.

Guard Against Wiles to Down Co-Operative Movements.

Editor The Maritime Farmer:

Co-operation between farmers, or organization for mutual benefit, is a theory that all will agree is sound and that every farmer should loyally support.

Our creamery and cheese factory industry was the first line along which farmers organized. Before creamery butter came on the market, the dairy article was usually traded at the country store for goods, was a drug on the market and a source of but little revenue to the province. Since the advent of the creamery, our butter is always in keen demand for spot cash and our creameries find it hard to supply the demand.

To operate a cheese factory or creamery successfully it is necessary that every dairyman, or owner of dairy cows, patronize the factory and supply milk as long as possible throughout the year. The larger the amount of milk handled, the cheaper it can be manufactured. Every man should, therefore, feel duty bound to support a creamery or cheese factory, if at all convenient. By making a uniformly good article these factories have found a good market abroad and by taking the bulk of milk created a better demand for all grades of dairy butter. However, the ruling price of the latter is usually five cents below creamery butter. It only costs three cents a pound to manufacture the factory article, and few home makers can get as much butter as a trained maker. It is poor business and a selfish, mean act for any one to withdraw his support from a business, that has helped everyone in the dairy business so much, in order to take advantage of a little local market now available.

If everyone would do as these few are doing, we would soon have the same old glutted market and a ruined industry. No reasonable man should expect others to support an enterprise for his benefit. To slip out of helping any co-operative concern, operated for the benefit of all for what we may imagine is a little better paying proposition for the time, is not at all clever—it is a narrow, short-sighted and small action.

It is surprising to learn that almost every season, on nearly every route, some new discontented dairymen that have supported the creamery for years drop out and make their butter at home. This sort of thing will weaken and often ruin a paying plant.

Several years ago the farmers' pork factories of Ontario were put out of business by their own patrons being foolish enough to let the old packing houses have their hogs for a trifle more than the market would justify—for a little more than they should know their stuff was really worth. They let their own lost hundreds of dollars each year since. This seems to be just human

In recent years egg circles have been organized in this province, and the advantages of selling eggs by this system must be apparent to everybody. Those familiar with the business tell us that 15 per cent. of the eggs received by the dealers under the old system were bad. This meant that in fixing a price they had to reckon that fifteen in every hundred had to be lost by somebody, and it was easy to guess that the producers had to stand this loss, whether their own particular lot was good or not. In fact, I have heard a man try to justify himself for selling some stale eggs with the statement that the price was fixed to allow for 15 per cent. bad anyway, so he might as well put them in. However, we all know that is poor business and when a system was devised that would guarantee to the producer of good eggs the full price and make the careless fellow lose what he was entitled to, besides looking out the best markets and paying the highest prices that such markets would justify, you would think everybody that was in touch with such a worthy organization would support it. We find bitter opposition from many country merchants and others interested in the good days of trade and the same tactics are being worked here as were used so successfully with the framers' pork plants in Ontario.

When a country merchant offers a cent more per dozen than the Circle, it does not matter whether it is above the best market quotations or not, it is hard to hold some people, and while this enterprise will outlive all opposition, it will have a hard enough time.

I will also instance the co-operative selling of lambs and wool. The bulk of lambs in this vicinity were sold at 6 to 6¼c live weight last autumn, while at the same time a farmer's institute in the western part of this province advertised for tenders for the selling of some 1200 lambs, and sold for 7 cents. They also received advantageous range of weights as the above prices quoted were for the best weights in each case. This one institute received five or six hundred dollars more by selling co-operatively then they would have received by selling in the old fashioned way. The advantage of selling wool in this manner was fully as great and if carried out all over the province would amount to a surprisingly large sum.

If we as farmers were properly organized so that numbers could be depended upon to stand together, how many different products could we not largely control the price of. It is often stated and true enough it is, that a farmer never has the privilege of setting a price on anything he either buys or sells. If he offers anything for sale, the question is what will you pay? If he buys anything it is what do you ask? Such being the case, whose fault is it?

Conditions need not be like this if every man joined an organization and stood loyally by it. We would have more to say re what prices we receive for the products we offer for sale. It seems hard to make much advancement along this line, at present, but before we withdraw our support from any cooperative association formed for our mutual good, to take any selfish advantage opponents may offer, we should consider what would happen to our business if everybody did as we purpose doing.

W. M. LEA.

Practical Suggestions on the Use of The Fanning Mill.

In using a fanning mill, one must be governed by the conditions of the grain he is cleaning. As the different grains have different weights per bushel, it is necessary, not only to use different sized screens, but also to regulate the wind, shake and speed of the mill to suit the different weights and sizes of the grains to be cleaned. The first thing to do is to thoroughly examine the grain, see what there is in it, and make up one's mind as to the best way to clean it out. The fanning will will only separate grain or seed of different size or weight. The wind of a fanning mill is one of the most important factors.

In cleaning oats for seed, regulate the machine according to directions on the mill. The first operation consists in blowing out all the chaff. Most of the very small seed will go through the screen under the hopper, but a certain amount will go through the screen in the lower shoe. To make a perfect job and to get all the larger weed-seeds, such as vetches, cockle, wild buckwheat, or even wheat and barley that are not the same size and weight as oats, the grain must be put through once of twice more.

The second cleaning requires quite a different operation. The riddles are to be arranged as for cleaning wheat, and anything of the size and length of wheat should go through the riddles and the large, long, heavy oats should go over the back of the machine. Care must be taken to see that the proper slant is on the riddles, so as to carry the oats over and all other grain, etc., down under the mill. In regulating the wind and shake, use very little wind, as you do not want to blow any of the light seed or small wheat or barley over with the oats; and have very little shake, so that the oats will not be stood on end and go through, but slide over the back of the machine.

In cleaning wheat for seed, after the chaff and small seeds are all removed, take out one or two of the wheat riddles and open up all the wind doors wide open. Good plump wheat weighing 60 pounds per bushel and over, will take more wind than the average fanning mill can supply. The good heavy grain cannot be blown over, but all the lighter grains, also oats and barley, ought to find their way over the back of the machine. Care must be taken to use conductors to carry the grain near enough the back of the machine to give the wind a chance. When there is still some small grain or seed left, I have sometimes found it necessary to run the grain through twice.

Should white caps in wheat (wheat hulls) be found troublesome to remove, select one of the long screens belonging to the lower shoe just large enough to let the wheat through—place the screen directly under the hopper, and this will extend far enough back to carry the white caps out over the machine. This long screen will also be found most useful when cleaning oats, whenever there are thistle tops or joints of oat straw amongst the grain.

Many experiments have proven that careful fanning pays many times over for the trouble in cleaning the seed grain. You have pure, clean, seed, free from weed seeds; and, besides, the longer and plumper seed produces heavier crops.—J. Fixter.

Shipping Potatoes in Cold Weather.

The shipping of potatoes during freezing weather is such an important operation and so much money is involved that information as to the correct method of shipping should be generally disseminated, and it is indeed surprising that the railroads do pot publish circulars and printed matter on this subject.

The free use of straw or mill shavings is advised in the shipping of potatoes during cold weather, except, of course, when fires are to be maintained in the cars while in transit. Fifteen hundred pounds is generally allowed per car of these materials, and certainly this much at least should be used. Four to six inches of mill shavings or straw on the bottom of the car is necessary and it is important that the corners be well filled before putting the sacks in the car. The straw or shavings at the sides and ends should be higher than in the centre.

The sacks as loaded should be laid three in a row across the car. This will leave space between the sacks and the side of the car which can be packed with straw or shavings. It will take about five tiers of sacks in height to give a maximum carload. It is important that the sacks bind together so that there will be no jolting or movement in the car, and it is therefore, necessary to pack the shavings or straw tightly around the sides and especially at the ends. After the car is loaded, at least six inches of shavings or straw on top is necessary. It will be found that four inches of shavings will give better portection against frost than six inches of straw, as they pack tighter and prevent circulation of air.

It has been found in practice that papering a car with building paper, or any heavy paper, on the inside, is a distinct advantage. This is especially true at the ends of the car and around the doors and it should extend a foot or eighteen inches up on the sides and ends of the car and be held in place with a lath nailed along the top edge of the paper.

Due precaution, with the use of straw, mill shavings and paper will cut down some very heavy losses and eliminate damage claims. The railroads

(Continued on Page 464).

HORTICULTURE.

The Blackberry may be grown by Everybody.

By L. R. Johnson of Missouri.

After several years' experience with small fruits a friend tells me that the blackberry is his most profitable fruit, and that he shall plant it more and more largely to the exclusion of other kinds. My own experience concurs in many respects, and for the last two years I have steadily increased the area of blackberry plantings at the expense of other small fruits.

There are several reasons for this course. The scarcity and high price of labor have militated especially against the strawberry, the cost of whose culture far exceeds that of any other small fruit. The black raspberry is a failure here unless planted in the shade of trees, and this cannot always be provided. There are objections against the other small fruits, except the grape which makes an excellent supplement to the blackberry.

The general advance in prices has not exempted the blackberry, and my estimate is that it is selling, at least in our local market at 20% more than three years ago. Only a fraction of this has been absorbed by rising labor cost, which is attributable to the fact that the culture of the blackberry is the simplest and cheapest of all the small fruits, and, with the exception of pruning, can be conducted by the cheapest grades of labor.

The blackberry possesses several qualities that act in its favor. One of these is its hardy and rugged character, combined with its general freedom from diseases an dinsects. There is no small fruit that can endure neglect with as little injury, a trait that ti inherits from its wild ancestors, to which it is still closely related. It requires no spraying and thus avoids one of the most expensive operations to which horticulture is subject. There is only one disease, the rust, that is able to inflict serious damage, and from this many of its varieties are compratively exempt.

Most Profitable of Small Fruits

It is a very heavy producer, and, acre to acre, its income is probably greater, on the average, than any of the small fruits. Not only is its yield heavy, but it is also exceedingly regular, far more so than the strawberry whose gross acre income may occasionally exceed it. In all my experience I have never known a total failure of the blackberry.

The blackberry is not exacting as to soil, but like all other plants, it has preferences, and we must satisfy these in order to reach the highest degree of success. The fundamentals of profitable blackberry culture, are, first, a deep, loamy soil filled with humus; next, abundance of moisture; than an annual mulch to conserve moisture and decompose into humus and plant food. These once understood, the next question is how to provide them. We cannot easily manufacture a loamy soil, so if it is not on the farm we must select the soil that nearest approximates it. A clay soil is generally good, because it holds moisture well and usually contains a good amount of plant food. Any soil that can produce corn, can produce a crop of blackberries. An orchard is a god place to plant not only blackberries but other kinds of small fruits, provided room is left for cultivating and spraying.

The next fundamental, moisture, we can combine with the fourth requisite, a mulch. We may safely say that wherever there is a good deep mulch, there is always a good supply of water for the roots, for the mulch prevents evaporation. The mulch, also, as it decays, provides a continuous supply of humus, and we know humus to be a great absorber and retainer of water.

But what shall we choose as a mulch for the material to make it grows scarcer and scarcer? In many localities the wheat area is being annually curtailed and straw is increasingly difficult to procure. Everyone must answer this question according to his circumstances. If there is a cheap supply of straw, an ideal method of culture would be to cover the ground in and between the rows with straw deep enough to prevent the growth of weeds and grasses. The very finest grades of berries, both in size and quality, would be thus assured. Strawy stable manure is a fine mulch except for the grass seeds it usually contains.

Mulch Culture Gives Best Results

My own plan is this: Straw is too expensive, therefore I try to raise mulching material. I discovered that in late summer after the berries had

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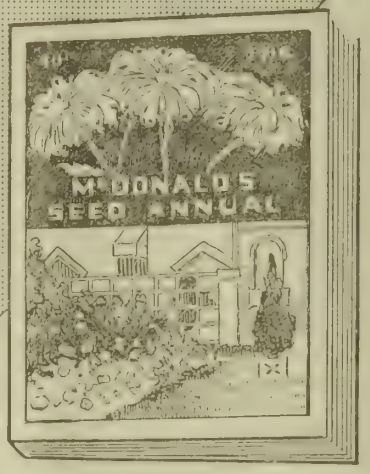

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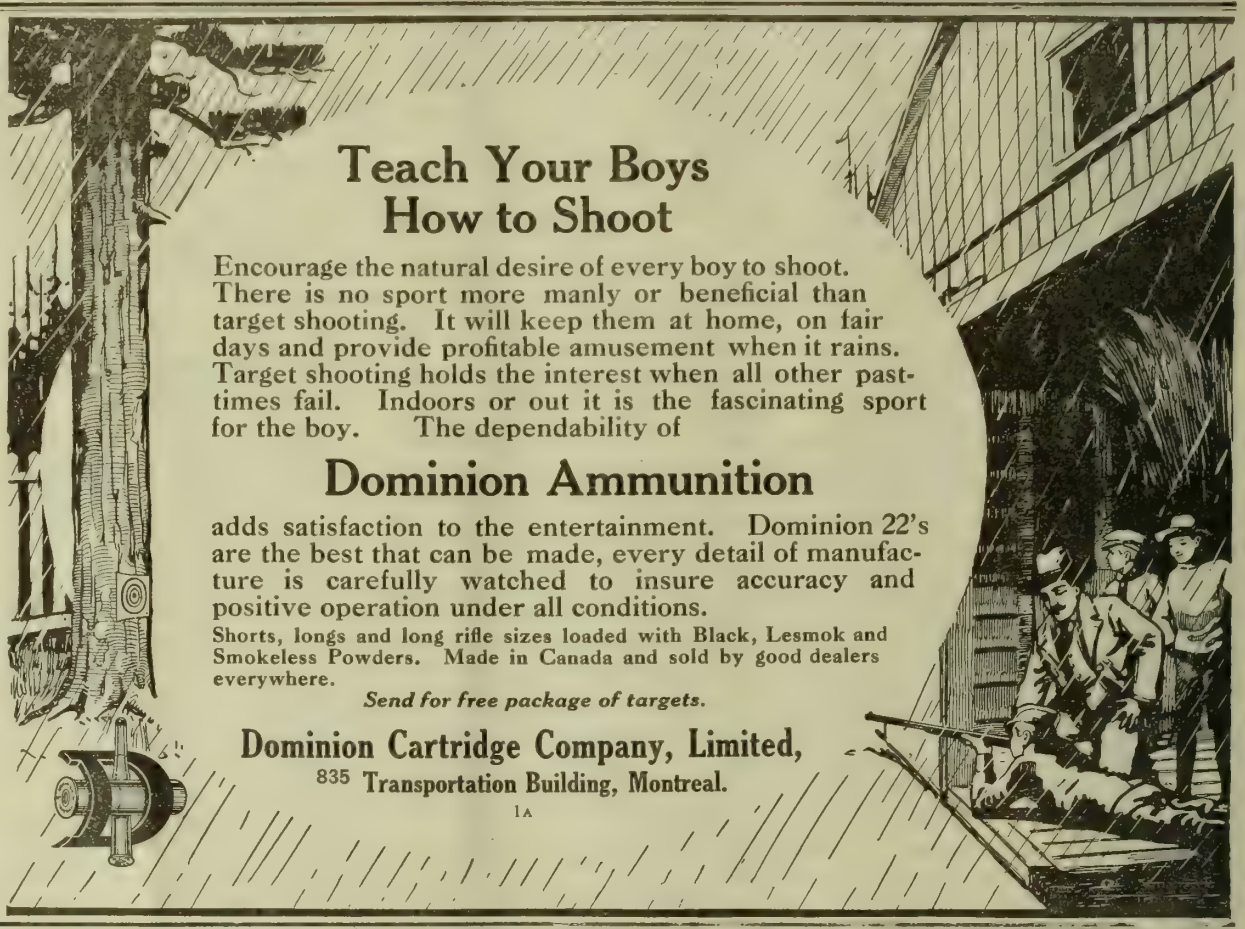

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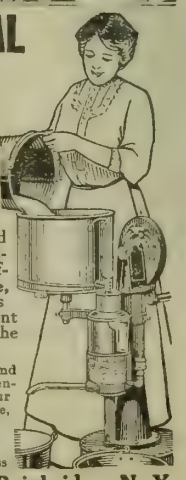

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NEW TOMATO "ALACRITY"

Developed by experts at the Central Experimental Farm, Ottawa.

EARLIEST OF ALL RED TOMATOES

ALACRITY produces a closer compact vine, set quite as freely with fine smooth tomatoes which are usually ready to market ten days earlier than any other strain.

The entire crop can be gathered generally in about three weeks from the time the first fruit ripens.

ALACRITY is undoubtedly the very best earliest scarlet fruited tomato.

1916 Flower and Vegetable Seed Catalog Free on Request

DUPUY & FERGUSON,
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Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?

He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
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for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

been picked ,a rank growth of crab and other grasses sprang up to a height of two feet and made an excellent cover crop for fall and winter. In the spring this grass, now dead, is raked from the middles up to and around the canes and there is enough of it to make a fine mulch. After this the middles ar cultivated up to the mulch on each side and this is continued unti lthe crop is gathered. Occasionally, if it appears to be needed, a dressing of stable manure is applied. This system, then combines both the mulch and clean culture systems.

Where there are no native grasses to come up, I should sow rye and vetch,. The handling of cover crops requires plenty of room between the rows, and 10 feet is not too much. Every fourth row there should be left an extra wide middle to admit a wagon for hauling manure and collecting the prunings of the canes.

Let us begin with the spring and follow the work of the blackberry field through the year. First in order is the pruning. With leather gloves and a sharp pruner, this is not a difficult job. First the main cane, if too tall, is cut back to a point that insures its ability to stand upright under its load of leaves and fruit. Next the laterals are cut off at varying distances according to size and number.

The larger the limb the longer I cut it, and the more ilmbs the shorter I cut them. The object is to leave no more buds of bearing wood than the vitality of the vine will support. Roughly speaking, I cut limbs 15 to 18 inches long and top main canes at three ot 4 feet hi ,hgacc - cg$ 1 3 to 4½ feet high, according to their strength. In case of extra prolific kinds, such as the Early Harvest and Taylor's, I cut a third shorter than this. We must regard pruning as simply a form of thinning the fruit and it is better to err on the side of too close rather ahan too long pruning. To allow a vine to overbear means not only small berries of poor quality, but a weak growth of new canes for next year's crop.

How and When to Prune

Pruning finished, the cut limbs are hauled out and burned. The blackber-

(Continued on Page 366).

FIRE NOTICE

RENNIE'S SEEDS

We desire to advise our many customers that although we have suffered a very large loss in Sunday's (February 20th) fire, we have sufficient stocks stored at our warehouse at Long Branch and other warehouses in Toronto to enable us to fill orders complete and to take care of the coming season's trade. We commenced shipping on the 21st at noon, and orders will be handled in our usual prompt manner.

RENNIE'S SEEDS, Head Office: TORONTO - - CANADA

Our Montreal Branch has been supplied with their season's requirements.

Practical Garden Tools

TOOLS like these will do all of the necessary work (except plowing) economically, whether for home, farm or market. You can plant certain crops close and straight, and work them safely, with wheel hoes. You save ground, save heavy investment at the start and yet do the best kind of work with proper tools.

IRON AGE *Hand Seed Drills and Wheel Hoes*

Will sow, cultivate, ridge, furrow, etc. better than you can with any old fashioned tools and ten times quicker. Pushed ahead a step at a time, these tools can be worked by women, or grown boys or girls. We show here a few only but we make 38 styles and combinations from which to choose. Prices, $3.00 to $14.50. There are also many attachments for special work.

Ask your dealer to show them to you. Write for our Catalog and Garden Manual.

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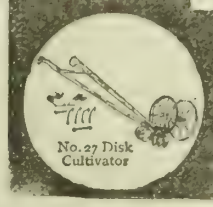

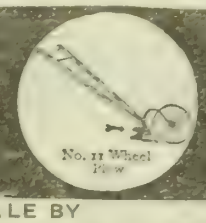

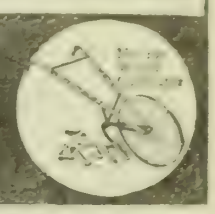

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ATTENTION POTATO GROWERS

A CONVENTION OF POTATO GROWERS WILL BE HELD IN THE FISHER MEMORIAL SCHOOL, WOODSTOCK, N.B., ON MARCH 22nd AND 23rd, 1916, IN CONJUNCTION WITH THE AGRICULTURAL SHORT COURSES HELD AT THAT INSTITUTION.

This Convention has been called at the request of several of the most progressive potato growers who realize the importance and necessity of encouraging the potato industry.

In 1914, New Brunswick porduced 10,000,000 bushels potatoes. In 1915 the yield was about 6,000,000 bushels. A good yield such as can be raised on our farms would be 15,000,000 bushels to 20,000,000 bushels, on the same acreage.

Why are we raising only 150 bushels per acre when we should raise 350 to 400 bushels? Come and learn why some are already producing 500 bushels per acre.

This is to be a Potato Growers' Convention. If you are interested in Potato Growing you cannot afford to stay away. Every problem will be discussed: Varieties, Fertilizers, Cultivation, Diseases, Methods of Improvement, Marketing and Standardization, together with exhibits of Different Varieties Potatoes, Potato Diseases, Potato Machinery and the Dominion Experimental Farm Agricultural Exhibit.

Some of the best authorities in America on Potato Growing will be present to take part in the very full and comprehensive programme that has been prepared. Among those who have promised to be present are: Dr. C. C. James, Dominion Agricultural Commissioner; J. H. Grisdale, Director Experimental Farms, Ottawa; E. S. Brigham, Commissioner of Agriculture for Vermont, who is considered to be the most progressive and successful potato grower in Vermont; W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa; J. D. McKenna, Manager of the Maritime Farmer, Sussex, Recruiting Officer for Kings County, and other speakers.

For further information address:
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Offer of Very Large

Stark Apple Trees

100 apple trees of the Stark variety, boxed and delivered to Berwick Station

For $19.50

CASH WITH ORDER

These trees are all at least six feet in height and are grown in the Annapolis Valley.

NOTE—Only one variety in offer and not less than 100 trees in an order.

Club your orders. Order before 1st of May

DAIRYING.

Annual Meeting—LaHave Creamery Company Limited.

The third annual meeting of the La Have Creamery Company, Limited, was held in the Court House, Bridgewater, N.S., on Friday, February 15th. About 125 of the shareholders were present and the interest was keen in all that pertained to the welfare of the company. Live and enthusiastic discussions took place on all the different branches of the business which showed that the shareholders were making an intelligent study of the affairs of the company.

The chair was occupied by the president, C. R. DeLong and was filled in his usual energetic business-like way.

The secretary-treasurer's report was read by the secretary manager, J. D. McKenzie, showing an increase in butter made from 40,000 lbs. in 1914 to over 139,000 lbs. in 1915, of a value of $41,000 and ice cream of a value of about $1900, about $22,000 worth of merchandise was handled, making a gross turnover of about $65,000 and a neat surplus on hand for the benefit of the shareholders and patrons.

The election of directors resulted in Mr. H. T. Hebb being elected in place of Mr. L. M. Hebb and the other retiring directors, C. R. DeLong and Asom Ernst being returned to office.

Mr. W. A. McKay, Dairy superintendent, was present and expressed his satisfaction on the splendid showing made, the business like way all questions were discussed, and the live interest shown by all present. He then dwelt on the importance of quality of butter made and recommended a system of cream grading whereby the patrons would be paid in accordance with the quality of the cream sent, as the most practical means of keeping the butter up to the highest qaulity, which resolution of the company was adopted.

The production end of dairying was dealt with by Mr. Harvey Mitchell, Maritime representative of the Dairy Division at Ottawa, who informed the meeting that Mr. A. L. Crosby, now of Lawrencetown, had been appointed as dairy recorder for Bridgewater and Yarmouth creamery districts and impressed upon the meeting the importance of cow testing.

It was decided to hold a patrons' picnic at the creamery during the coming summer, the arrangements to be made by the directors.

This creamery company although only two years in existence has made a remarkable showing; has at present about 440 patrons and the prospects of an increased number during the coming year; operates over a large territory, over ½ of the cream coming in by train and the prospects are it will be one of the largest in the province.

South Creamery Co., Ltd., Holds Annual Meeting.

The annual meeting of the South River Creamery Company, Limited, was held at Loch Katrine, N. S., on Tuesday afternoon, February 15th, and was in point of numbers and enthusiasm by far the best yet held.

The secretary treasurer's report showed an increase in business done of over 66%, 88,040 lbs. of butter was made of a value of over $22,000 distributed among 165 patrons. The 1914 output was 49,000 lbs. After paying all expenses for the year a neat surplus was left on hand and a 6% dividend declared on paid up stock.

The retiring directors were re-elected for a term of three years, and prospects are very bright for the coming year.

Mr. R. B. McLennan, dairy recorder for the district reported some splendid gains of production in individual herds and for 215 cows in regular test for the year, an average gain of $9.83 per cow over 1914.

Mr. W. A. McKay, Provincial Dairy superintendent, was present and complimented the company on the splendid showing made during the year and dwelt on the importance of keeping the quality of the output up to the highest possible standard, and recommended the adoption of a system of cream grading to attain this end, which on motion was unanimously carried by the meeting.

This creamery, although only three years in operation, is already doing a splendid work over the territory that it serves and we confidently look for it to do a much greater work in the future. The principles of cooperation are being worked out in a practical way and on every side appears better evidences of prosperity than heretofore.

Full Ration of Air Increases Milk Flow.

When a dairyman endeavors to increase the output from his cows, he almost invariably increases the ration. Only to a very small percentage has the thought occurred that increased product means the use of more air as well as more feed. The production of milk is work for the cow and it requires no argument to convince that more air is inhaled and exhaled when an animal is at work than when at rest.

If the cows are out of doors or in a stable that has ample ventilation, the matter need receive no attention. On the other hand, if the supply of pure air is not sufficient to fully supply the requirements of the animals, it is useless to endeavor to increase their output by increasing the ration of feed.

An experiment conducted by the Wisconsin station some years ago furnished some interesting results upon this point. Twenty cows were used in the test. They were subjected to poor ventilation for two days and then to good ventilation for two days and this process was repeated four times. At the end of these eig .t days they were given good and poor ventilation for one period of three days each.

No difference was found in the amount of feed eaten under the two conditions, but the cows averaged a little more than a half pound more milk per day when they had good ventilation than when they had poor.

That there was a difference in their condition as regards health is shown by the fact that the cows had lost in weight to the extent of 10.7 pounds per cow as an average at the end of each period of poor ventilation and regained their weight during good ventilation. They drank 11.4 pounds more water per cow daily when receiving insufficient ventilation.

The conditions under which these tests were made were not distinctly different from those existing in many stables. The cows were kept in a half basement stable. During periods of poor ventilation the hay chutes were closed and at periods of good ventilation they were open.

Skimmilk and Butterfat.

A prominent Holstein breeder informed us the other day that he was feeding $2.00 worth of butterfat each day to his calves. It has been his opinion that a better calf could be developed by feeding whole milk instead of skimmilk. Another breeder, raising the same kind of cattle, feeds whole milk for two weeks only and then uses skimmilk, and it is his opinion that better calves can be reared on skimmilk than on whole milk. Our observation and experience lead us to believe that skimmimlk is a better feed for dairy calves than the whole milk. For the first few months calves fed on skimmilk may not have as sleek and smooth coats, but when they shed their baby hair, which is done when they are about eight months old, their appearance will be quite as satisfactory and their growth fully equal, is not superior, to those fed on whole milk.

The skimmilk should be fed warm and fresh or as soon as it comes from the separator, or disappointing results will follow. The feeding of cold, or tainted, or too much skimmilk is invariably the cause of producing unthrifty calves. The calves' milk should be weighed each time for the best results and increases in allowance made very gradually. When skimmilk is properly handled and fed there is no necessity for feeding butterfat worth 30c a pound to grow the right kind of dairy calves. Skimmilk for growing animals is a much better feed than most people realize.

Calves on Skim Milk.

Which are the skimmilk calves, was the puzzle. Two lots of four calves each, one fed whole milk and the other skimmilk and boiled flax seed. The two lots looked equally sleek and thrifty. Mr. Peters, animal husbandman of the North Dakota Experiment Station, explained that the experiment was undertaken to determine how well dairy calves could be grown on skim milk.

The first three weeks both lots were fed whole milk. From then on, Lot No. 1 was fed 8 pounds whole milk and 8 pounds skim milk daily, while Lot No. 2 was given 16 pounds of skim milk and one pound of boiled flax seed, which replaced the fat taken out in the cream. During the first three months Lot No. 1 made somwhat larger gains and looked a little more thrifty, but during the next three months, Lot No. 2 caught up. At six months several experienced dairy cattle breeders pronounced the calves in .Lot No. 2 equal to those in Not 1 in individual merit and dairy development. When the calves were five weeks old they were also fed clover hay and a grain ration made up of equal parts whole oats and bran. To this was added one-tenth by weight of linseed meal. It cost $19.00 less per head to feed the skimmilk calves than those fed half whole milk, to the age of six months.

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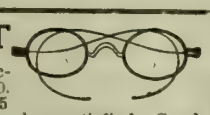

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Try an Ad in the FARMER

Milking a Kicking Cow.

Many devices for handling cows with sore teats have come to my notice. The best suggestion among those I have read is, "Always soften the teats with lard," but when a cow has torn the teats on barbed wire or thorns something more is necessary. Back in the summer, one of my cows which is a very heavy milker calved before I expected her to do so. I had noticed her the evening before and thought that she would go two or three days longer. Evidently she calved in the night and I did not see her until noon the next day. Two of her teats which the calf did not suck were so distended that the skin had begun to crack. Though a very gentle cow, she vigorously objected to having those sore teats milked. She was in the pasture and all the devices for preventing kicking which I had previously tried were applicable only to stable milking. I took two hame straps and connected them with a harness ring and buckled one around each hind leg. I softened her teats with lard and went at it. She fussed a bit at first but soon stood still and let me finish the job without further trouble. I have always noticed that if you fix a cow so that she can't kick she will soon give up trying, but if you let her kick and then whip her for it, she will hit the last lick no matter how long you keep it up. Many a naturally quiet cow has been made vicious in that way.

Milk Material.

How can you hope for the production of milk when you do not provide the cow with suitable feed from which to manufacture the milk? Is it reasonable to expect a liberal flow of milk from the cow fed on musty, stack-fired, discolored hay and a stinted allowance of grain feed? How would these conditions compare with the same cow fed on all the bright green clover hay that she could consume from morning until night, week-in and week out, and, besides a liberal feed morning and evening of cornmeal, shorts and bran, with a little oilmeal, the whole mixture moistened with warm water, just to suit her taste? Would you be skeptical if such reverse feed conditions would increase the milk flow from 25 to 50 per cent? It is a question of giving the milk factory suitable material from which to manufacture milk, material that has available milk properties for this machine to work up. Too many cows are starved until they do not represent half their ability to yield milk.

If testing the cows, do so often enough to be able to find the correct average for each cow. Tests vary greatly and often inexplicably. Apart altogether from what are termed normal variations from milking to milking, besides the variations between mroning and evening, and the variations bewteen the fore milk and the strippings, careful observers have noticed in two days a variation in the test of almost two per cent of fat in the milk of individual cows, for which no reason can be assigned. Obviously, then, it would be quite unfair to judge any cow on any one isolated test when it might be 3.0 one day and 4.8 another day. Which could you take? A fair and just way is to take samples regularly and test a composite sample once a month. Then there will be credit given where it is really due, not necesarily to the one that is supposed to be a high tester because she is of fancy name of fancy price, but possibly to some despised individual which is really the queen of the dairy.

Heavy cream means a smaller amount to be taken care of, hence it is likely to be more thoroughly cooled and re eive better care.

It costs less to buy a DE LAVAL than to buy experience

EACH year some 40,000 farmers, who have bought at one time or another "cheap" cream separators, discard their inferior, cream wasting machines and replace them with clean skimming De Lavals.

These men bought the "cheap" machines because they thought they were "good enough" or "just as good" and that by purchasing such machines they could save a little money. They actually would have been better off in most cases had they bought no separator; for they lost most of the money they spent for the "cheap" machines, besides all the cream these machines have failed to get out of the milk.

No one ever saved money using a "cheap" cream wasting separator or an old or half worn-out machine. No one ever got back the money spent for such a machine by continuing to use it. Those who bought 'cheap" machines and got out of the difficulty best are the ones who quickly discovered their mistake, discarded the inferior machines and put in real cream separators—De Lavals.

There are nearly 2,000,000 farmers who have bought De Lavals, and every one of these had just as many opportunities to boy "cheap" separators as any one else. They did not do it and are now money ahead. They have avoided paying the high cost of experience, and their De Lavals have paid for themselves many times over. It always pays to buy a separator of proved, known superiority.

The nearest De Laval agent will be glad to let you see and try a De Laval on your own farm, without obligating you in any way. It is better to take advantage of this opportunity than to pay dearly for your own cream separator experience. If you don't know the local De Laval agent, simply address the nearest main office as given below.

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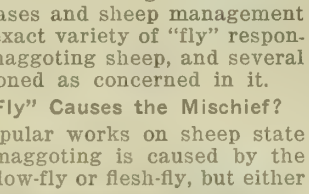

LIVE STOCK.

"Fly" or Maggot on Sheep.

The treatment for "fly" or maggot, has been frequently described in this journal, but it seems necessary to repeat a good deal of what has been alreday said for the instruction of the beginner or the careless reader.

The Symptoms

The victim of "fly" attack soon becomes very uneasy. It is at first restless and excitable, runs about, stamps its feet and sometimes tries to bite the part that is maggoted. A symptom that is considered particularly diagnostic is a peculiar shake of the tail, which, when observed by the experienced shepherd, always leads him to make a closer examination of the animal. As the mischief progresses the suffering increases, the sheep becomes dull and dejected, probably lame, loses appetite, and stands apart from its fellows, listlessly, with hanging head. The wool at the seat of attack is rough and raised, presenting a moist appearance, and as the maggots burrow their way deeper into the skin and subcutaneous tissues, close examination shows a moving mass of them. Unless they are destroyed and the wounds kept clean, the torture ends in the death of the sheep. It may be interesting here to note that there appears to be some confusion or misapprehension among writers on ovine diseases and sheep management as to the exact variety of "fly" responsible for maggoting sheep, and several are mentioned as concerned in it.

What "Fly" Causes the Mischief?

Most popular works on sheep state that the maggoting is caused by the common blow-fly or flesh-fly, but either entomologists are in error as to the reproductive habits of this pest, which is hardly probable, or the impression that eggs are laid in the fleece, and afterwards hatched into maggots, is erroneous. There is the third alternative of acquitting the comomn blow-fly of any part of the mischief. An examination of ten different works on sheep shows that one describes the "fly" as Musca vomitoria, one as Sarcophaga carnaria, one mentions both species as "prevailing in sultry weather," two describe it as the "large or common blow-fly," which they speak of as "depositing its eggs," or of the maggots as "larvae hatched from ova deposited in the fleece," while to the remainder it is simply the "fly," and nothing is said of its variety or technical designation. Years ago, when this question was under discussion, some specimens sent as the "fly" causing mgagots in sheep proved to be Musca Caesar. Of course, all these theories cannot be correct, and there is clearly a mistake somewhere, for entomologists tell us that in the case of the blow-fly or flesh-fly—Sarcophaga—the eggs are hatched in the oviducts, or in a special pouch, and the larvae produced alive, as many as 20,000 being born in a single season. Further, the larvae of Sarcophaga carnaria are described as feeding on dead animal substances. In the case of a sheep being attacked by a "fly" it is generally considered that eggs are deposited in the wool, especially about dirty parts of the fleece, and directly after the eggs ar hatched the maggots begin to burrow and torment the animal.

In the case of both the blue-bottle fly and the green-bottle fiy—Musca vomitoria and Musca Caesar—the larvae are not produced alive, but eggs are laid, which are, however, speedily hatched, and this seems much more like the procedure of the maggot-fly of sheep. Sarcophaga carnaria—the blow or flesh fly—is ovoviviparous, a kind of insect marsupial, which receives its own eggs into an abdominal pouch, and then basks in the sun until they are hatched, and ready to be deposited as living larvae on animal matter, proferably putrid. Musca vomitoria, the blue-bottle fly, and Musca Caesar, the green-bottle fly, are both oviparous, and of these it is, of course, more correct to speak of eggs "deposited" and "hatched." Either the blow-fly has nothing to do with maggoting sheep, or it is a mistake to regard the maggoting as resulting from eggs deposited. Probably a good many will regard the matter as of no great moment; nor is it, so far as the results to the sheep and the shepherd are concerned.

Things that Attract the Fly.

It is generally considered that the "fly" deposits its eggs on the wool, where it lives on the yolk, especially about the tail and other parts that are contaminated in diarrhoea and dysentery, or in some few cases by milk. Further, it finds out wounds, sores, and abrasions of all kinds. There are some who think that one kind of fly selects dirty wool, and another variety sores, and that when the former has got in its work the latter may join in and asist in the mischief. Everyone familiar with sheep understands that a wound is not an absolute necessity for maggoting, and that the majority of cases we get in summer arise quite independently of an abraded surface; or in other words, there are many more cases in which the "fly," be the variety what it may, is attracted by soiled wool, especially about the region of the tail, than by the existence of wounds; but that these are unimportant, or not extremely liable to become maggoted, is quite another matter. Not only sheep, but other animals have the same liability. Some time ago I spent hours in exploring and removing maggots from wounds in a dog, shot by a keeper, and left in a wood for several days, and these surfaces presented no difference in appearance from those found in the sheep. I have seen a cupful of maggots raked from a wound in the foot of a horse running in the field.

Nearly all authorities give prominence to the facilities that wounds offer for maggoting, and agree that in foot-rot, scab, eye and scalp injuries, and other disorders and accidents, the "fly" constitutes a serious complication in summer. No wound should be considered trivial at this season of the year, owing to the liability of sores of all kinds to become "fly-blown." May and June are considered the great "fly" months, but the attacks are generally continued throughout the summer, and in mild seasons are always more prolonged and continued well into to autunm—in fact, the flies seem to get fiercer and more troublesome towards the end of their time. In thundery weather, and after showers, the shepherd needs to be especially vigilant, unless his sheep have been properly dipped or otherwise protected. Even where this has been done attention should be paid to preventing the sheep and especially lambs, getting dirty behind, and such locks of wool should always be as soon as possible removed. Filth, no doubt, forms a congenial habitat fo the maggots, and a damp, foetid patch of wool will be generally found where they are actually at work. In bygone times powdering used to be a favorite method of preventing "fly" attacks, a mixture of poisonous drugs being dredged into the fleece. Old-fashioned country druggists used to sell hundredweights of "fly" powder, but it has gone very much out of fashion during recent years, and dipping and sprinkling have superceded it as being easier to use, more economical, and more efficient. They consist for the most part of mixtures of sulphur, arsenic, hellebore, white lead, cinnabar, burnt alum, Armenian bole, prepared chalk, and whale oil in various conbinations and proportions, with burnt umber of ochre to give the fashionable tint to the fleece. According to Steel, a few drops of fish oil sprinkled on the animal in May will effectually protect it for the whole season. He admits it gives the wool a peculiar smell which is difficult to get rid of, but, independent of this, I would rather trust to a reliable dip than to even a large qupantity of fish oil.

Prevention

Apart from dipping this must include the prompt treatment of wounds and skin abrasions at the time of their infliction, the removal of dirty locks of wool and the trimming of up parts contaminated, where, owing to the nature of the food, the bowels are relaxed or the animal suffers from diarrhoea. These precautions, however, will not entirely suffice, for experience amply demonstrates that the yolk of the wool will prove a sufficient attraction, and that no matter what care is taken, the "fly" will sometimes strike, especially on hot sultry days after rain, unless thehre is an application of of some agent that is either obnoxious to the "fly" or will prevent the development of the maggots.

The Poisonous Dip

This is where the poisonous dip gets in its work. What constitutes a good dip is a point on which there naturally exists a good deal of difference of opinion. The "poison" bogey frightens a good many, but properly prepared poisonous dips are perfectly safe if or-

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dinary care be used and the maker's specific directions framed to ensure safety and efficiency are followed. A poisonous dip by remaining on the fleece will, if employed in the early part of the season, confer immunity from "fly" to a surprising extent, as well as prevent the development of the larvae, and compass their destruction if used as a "cure."

I am not an advocate of home-made dips. I hate a patent medicine man as the devil is reputed to abhor holy water, but there are some things that the specialist can do better for us than we can do for ourselves, and the manufacture of sheep dip is one of them. There is as little economy in attempting it as in making soap or candles, or spinning wool and flax, at home, and the usual result is the producion of an inferior article at an increased cost. There is first the difficulty in procuring the necessary ingredients, because the sale of poisons is hedged about with no end of restrictions, and, next, the enhanced price inseparable from the purchase of small quantities of drugs. There is the further expenditure of labor and fuel in procuring hot water or boiling, and the risk of poisoning half the parish from having superfluous material about the place. When sheep can be efficiently dipped with material that is readily soluble in cold water, and sufficient of it can be obtained to dip a score of sheep for 1s. to 1s. 4d., it is utter folly to be boiling up arsenic and soda to make a dip at home. Summer dipping after shearing, to ward off the attacks of the maggot-fly, is a most useful precaution, and should always be practised.

Destruction of the Maggots

Treatment for this is simple enough, but some of the agents employed are objectionable on account of their drastic character. Some still use "fly" powder referred to, or even powdered white lead, which is dredged over the part, and the maggots are pooked out with a sharp-pointed stick. It is best to start by clipping the wool, notwithstanding that when a large area is involved, it causes great disfigurement, because the mischief generally extends much farther than a superficial examination reveals, and maggots will be found beneath the wool at a considerable distance from the main seat of attack. In some districts shepherds carry with them, wrapped in a piece of flannel and enclosed in a leather pouch, what they call a "fly-stone." This is nothing more than a lump of perchloride of mercury, and I have seen a piece weighing at least 4 oz. in possession of a man who knew as much about its deadly properties as I do of pure mathematics. There is always a mystery about how large quantities of this poison, as well as of uncolored arsenic, the sale of which is illegal, is obtained. On finding a sheep "struck" with "fly," the shepherd pulls out his pouch, expectorates on his "stone," and rubs it vigorously among the maggots. There is no doubt about its killing them, but the drastic application of such a powerful corrosive is unnecessarily severe on the sheep, although I must admit never having heard of injury to the sheep or of subsequent trouble from its employment. It is a powerful antiseptic or germicide, and calculated to keep a wound healthy, but it would be equally efficient if used in a milder form. An example of a "fly" oil very popular in some districts is:—Perchloride of mercury and hydrochloride acid, of each 1 dram; spirits of tar, 2 drams; oil of turpentine, 1 oz.; boiling water to 8 oz. The mixture can be carried in a flat bottle in the breast pocket, and after shaking well together a few drops of the dressing should be poured among the maggots, taking care to involve them all.

There are plentyl of other agents that will kill them, inlcuding several of the essential oils. An American remedy is one pint of oil of sassafrsa in four parts of spirit. In ordinary cases—this is, where the maggoting is detected early, and the pests are killed—their destruction and a single dressing are all that is necessary, but in advanced cases, where the mischief is extensive, and ugly suppurating wounds and deep fissures are left, further attention is necessary. Some cover up the wounds with rags ot protect them from sun, air, and the attacks of other flies, but I am not enamored of the practice, and prefer to shelter the sheep and dress daily with a solution of one of the many soluble coal-tar preparations. Such wounds, when properly attended to, soon heal. For preventing "fly" attack on chance wounds or abrasions, the same antiseptic dressing may be used. A mixture of sublimed sulphur in carbolized oil is also very useful. It can be mixed together and kept in a can, and applied with a stiff brush after stirring. An ointment made by mixing: Oxide of zinc, 1 dram; pure carbolic acid, 10 drops; lard, 1 oz., is also a useful wound dressing, but to prevent the attacks that arise from dirty fleeces there is nothing like periodic dipping. —Pateley Bridge.

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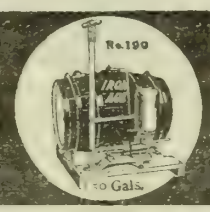

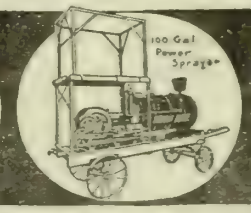

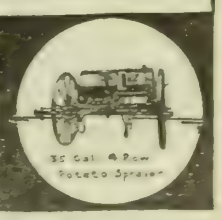

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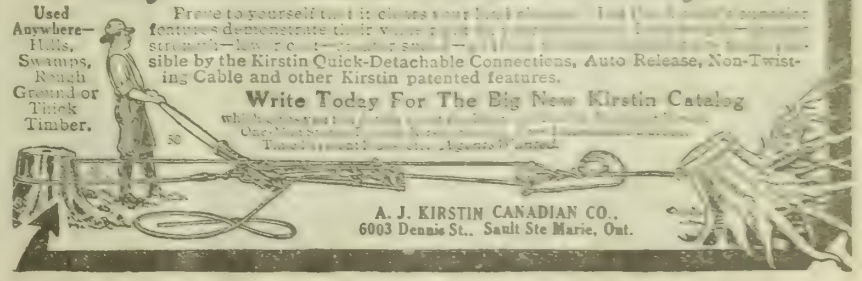

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THE HORSE

Strangles in Horses.

The agricultural bureau of New South Wales is an organization comprising many branches throughout the State. These branches are correlated to the Agricultural Department of the State, by whom an officer is appointed especially to attend to their needs and generally to organize the movement. The branches hold meetings at which papers dealing with agriculture, horticulture and kindred subjects are read and discussed. A brief summary of any paper which may have been read and of the discussion which followed it subsequently appears in the "Agricultural Gazette of New South Wales," the department's official organ. The following is a summary of a paper read by the chairman at a meeting of one of the branches on the subject of strangles in horses.

Mr. F. Tatlow said strangles was almost identical with the common ailment known as distemper; several veterinarians stated that they were one and the same. It usually appeared in young horses (colts or fillies), especially in highly bred animals. As it was a contagious disease all animals in the same paddock were likely to become infected unless they had previously suffered from it. Young animals contracted it more readily from aged than old from young. In stables where the complaint was discovered it was almost certain to attack all horses that were fed or bedded with the sufferer. Immediate isolation was recommended while the disease was in its early stages, and care should be taken to cleanse and fumigate all feeding troughs, boxes, and mangers where sick animals had been fed. Lime washing the walls, etc., of stables could not be too extensively carried out. The free use of tobacco wash could be recommended. Thorough fumigation of stables and feeding places with tobacco smoke or sulphur was advisable, and it should be carried out while the horses were in the stables. When animals were discovered suffering in paddocks they should be at once housed and treated in the above manner. The disease could be contracted by actual contact, and even at considerable distance the germs exhaled are in many instances responsible.

Symptoms

The symptoms noticeable in early stages were slight indisposition or listlessness, then in a few days a stiff neck, somewhat swollen throat, a dry hacking cough, and a thin watery fluid succeeded by a thick purulent discharge of a whitish color from the nose. The salivary glands, being inflamed, afterwards closed, pus then formed, and an abscess became pronounced. When suppuration took place in large quantities, it was an indication that the abscess had broken and the animal was then on a favorable way to recovery. It was essential that means should be used to encourage free discharge from the nostrils. In some cases suppuration continued for weeks, and even in extreme cases, which had come under his notice for months.

Treatment

To effect a cure in the early stage of disease, an animal that has been broken in should be rugged, kept warm in a well-ventilated stable, fed on light bran mashes, etc., and given "hay-tea" as a drink. Undue falling off in condition should be prevented. If the patient had difficulty in swallowing food it was advisable to give it in a liquid form or as a drench. In the event of the throat becoming closed, some authorities advised the use of a small cricket bat, or bat-shaped board, dipped in Stockholm tar; this was put down the throat as far as the abscess, or made to pass over the formation. When the lump would not discharge under ordinary circumstances a steaming process should be adopted by fixing on a nose-bag containing a bran-mash sprinkled with turpentine or eucalyptus; his experience had proved the latter the better. The frequent application of fomentations was desirable. A simple and effective foment was made by mixing two teaspoonfuls of mustard in a pint of water. The region affected should be bathed with this frequently, say, morning, noon and night. This treatment proved very effective in alleviating distress when an epidemic of strangles or distemper had broken out amongst 2,000 horses at a military encampment in connection with the 1901 celebrations. Should the discharge from the nostrils resist the treatment, an operation with knife or lancet would probably be necessary, and for this purpose it was advisable to obtain the services of a practical veterinary surgeon, who would give full instructions for the further treatment of the case.

Replying to questions, Mr. Tatlow stated that the disease was contracted from external sources, and more likely to manifest itself in damp weather, as the germs would then be more active. Fumigation would be more effective than spraying walls, etc., with germicidal preparations, as in the former the animal affected would inhale the fumes directly. The spraying would probably prevent the further spread of infection by destroying active germs. "Hay-tea" was prepared by immersing a bundle of hay in a can or bucket of water and allowing it to boil for an hour. When strained and cool enough it was given to the animal to drink or applied as a drench. In the aplication of Stockholm tar to the throat the gag would be of advantage to enable a clearer view of the affected part; if not available, a twitch could be used to raise the horse's head.

Locked-Jaw in Horses.

Locked-jaw is a spasm of all the voluntary muscles, but particularly those of the head and neck. The onset is generally gradual, but tetanus may be suddenly manifested. For a few days the horse may appear out fo sorts, off his food, partly chew and drop it, and gulp his water when drinking. Then the motion of the jaws becomes gradually considerably limited, saliva dribbles from the mouth, and inability to feed, although apeptite may not be in abeyance, becomes apparent. Presently the jaws become rigidly set and the mouth cannot be opened. The author of "Horses and Stables" says:—"The attack is characterized by closure of the jaws, great difficulty in use of the jaws, great difficulty in swallowing, rigidity of the limbs, and extreme difficulty in moving. The animal also pokes his nose, as if suffering from sore throat. As the disease advances the jaws become so tightly locked that neither food nor medicine can be introduced through them. Within three or four days, and sometimes earlier, the symptoms reach their height. The ears are erect and turned forward, the eyes are retracted, and the haw partly protruded over them. The nostrils are dilated. The animal stands persistently; his legs are stretched far apart and look more like wooden stilts than living structures. The tail is upraised, the belly is tense and tucked up, and the muscles everywhere stand out prominent and rigid. The voluntary muscles of the internal structures are similarly affetced. The involuntary muscles of the intestines are torpid, because the nervous force seems to be monopolized in the voluntary muscles. Hence arises the obstinate constipation which forms so marked a feature in this disease. Notwithstanding the intense contraction and rigidity of the muscles, the patient is highly sensitive and shrinks from the slightest touch or approach to a touch. The mere entering of the animal's box is frequently sufficient to produce violent tetanic convulsions. He sweats profusely and groans from pain. A very marked symptom consists in the rapid protrusion of the haw over the eye if the horse is touched under the chin, or if his head is eelvated. Death, unless the symptoms are relieved, occurs in from two to twelve days. The immediate cause in most cases is exhaustion. Tetanus, in some cases, by seizing at once, or almost at once, on some vital organ, may produce death very speedily, with scarcely any outward symptom except great pain and rapidly increasing prostration." Formerly, tetanus used to be described as 'traumatic" when associated with any wound or palpable injury, and "idiopathic" when there was no perceptible external injury. Now tetanus is known to be an infectious disease, and one of the large class due to a micro-organism. The germ in the case of tetanus is named the bacillus tetani, and the spasms are due to a poison or toxin produced by the bacillus. Once a typical case of locked-jaw is seen, the symptoms and appearance of the animal are not likely to be forgotten.

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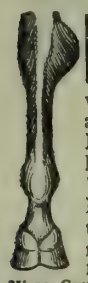

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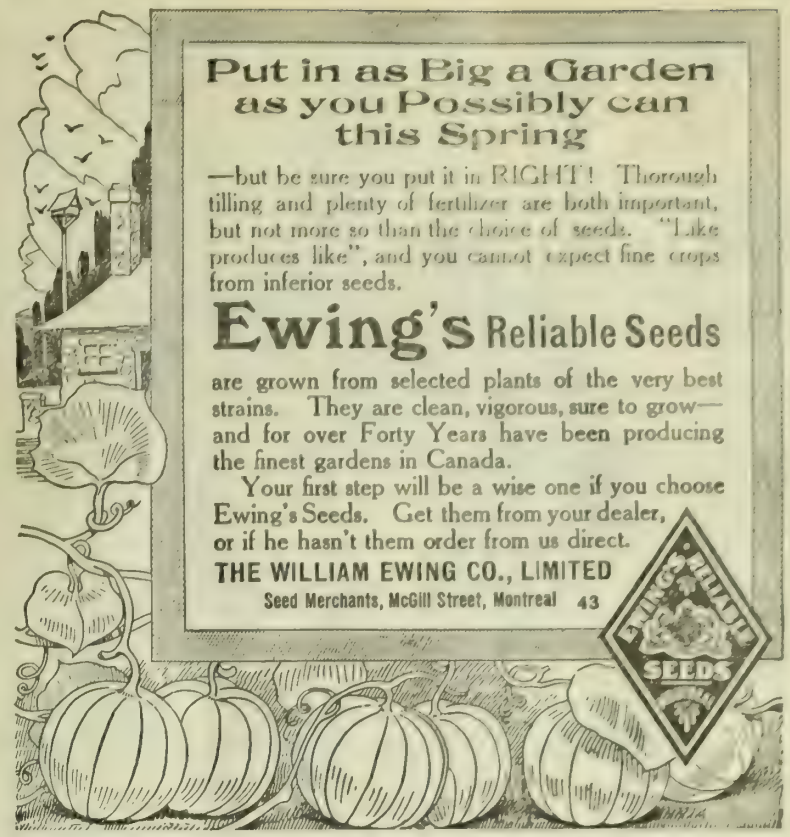
"Washy" Horses

Diarrhoea is not a disease, but only a symptom—generally of digestive derangement or of blood disease; but it is not always easy, even where there is opportunity for personal examination, to put the finger on the cause or to remove the trouble. Some horses are naturally more relaxed than others, and so well is this recognized that there is a popular name for them—they are described as "washy." They are generally free and fleet, but deficient in "bottom," for the simple reason that they are weakened by scouring. They are generally all right as regards their dung while standing in the stable, but purge freely when on a journey, and seem to lose as much flesh, getting narrow and tucked-up, in a 20-mile run as they can put on in a week of high feeding in the stable. There comes a time when animals start this game, and there seems no real cure for it, and such horses are only kept going by the exercise of great care in feeding and management. Palliation seems about the only thing that is possible. Such horses require to be fed on the best of dry food, and to have a restricted allowance of soft water. It is well to avoid the use of so-called horse mixtures which are offered for sale. One never knows what one is buying—all sorts of new, damp, mouldy rubbish goes into them—stuff we would not give to hogs if we saw each ingredient of the mixture separate and whole. If a mixture of maize, oats, barley, peas, beans, etc., is desired, the beter plan is to purchase sound old grain separately, and crush and mix for oneself. Old beans, sound, heavy oats, and good old hay are all good with a limited quantity of water before each feed, or, as a substitute for water, thin, well-boiled flour gruel. It is always well to be cautious in the use of astringents, but occasionally one of the following balls may be given: Powdered cinnamon and catechu, of each, 1 dram; powdered gentian and ginger, of each 2 drams; powdered capsicum, 20 grains; oil of aniseed, 20 drops; treacle to form a ball. Half-a-dozen of these should be made and kept handy for giving one when occasion seems to require it.—H.S.

Faults in Driving.

One often hears a good deal about this or that bit, or bridle, for restraining hard-mouthed, bolting, and other awkward horses, but I fancy more depends on the rider's or driver's hands than on the kind of bit or bridle. Some men have naturally better hands than others, and women as a rule have lighter hands than men. Good hands, I think, are, to a certain extent, a gift, for, though bad hands may sometimes be improved by tuition and practise, still, some people never acquire good hands, try as they will. From what may be seen on the road, in the hunting-field, and, in fact, wherever horses are used, bad hands appear only too common. Some people always ride or drive on one rein, which causes a horse to have a one-sided mouth, others drag so hard at the reins that in harness the horse seems to draw the vehicle as much by the reins as by the traces, or, if the horse is being ridden the rider looks as if he were using the reins to hold on with; in either case this constant dragging at the reins deadens, and in time spoils, the horse's mouth. Others, again, ride and drive with such a loose rein that they have little or no control over the horse. Constandtly jerking the reins while riding or driving is very objectionable, as it not noly punishes the horse, but renders his mouth less sensitive. Dragging or snatching at the reins when mounting a trap or saddle is a common fault, which may cause a tender-mouthed horse to run back or become a bad starter. The habit that some horses have of rushing off before the rider or driver is seated can generally be cured by letting an assistant stand at the animal's head, and by accustoming the horse to walk for the first few yards. Some people, although free from the foregoing faults, are still never able to establish that mysterious understanding between themselves and the horse which links together the intelligenve of man and animal, and not only gives the one perfect control over the other, but adds much to the pleasure of riding and driving. This wonderful power is difficult to explain, and is ont trasnferable from one person to another, but its reality is undoubted.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Liver Troubles

During the latter part of winter and early spring, annually a large number of fowls are lost, due to liver troubles in various forms. The reason this disease is more prevalent at this season is because conditions are then best for its development. Liver troubles generally are caused by overfeeding, feeding of improperly balanced rations, lack of exercise and green food. There are a large number of diseases of the liver; all more or less caused by the same remedies.

Some of the symptoms of liver diseases are: Rough plumage, watery diarrhoea, first brownish, then yellow; lack of appetite; slow and inactive in movements, purple comb, and careless disposition. Post-mortem examintaoin would show the liver enlarged and sometimes accompanied by a fatty degeneration. In the case of tuberculosis, the liver would be covered with nodules of a cheesy-like formation and appearance.

The first thing to cure or prevent this disease is to change the food and method of feeding. Feed less solid and rich albuminous foods and more light bulky foods. Guard against overfeeding. We have sometimes found it advisable to starve the birds for a day and then to feed very sparingly. Feed plenty of green foods in the form of short, succulent grass, dandelions, cabbage leaves mangels, sprouted oats and other vegetables. Make them exercise by feeding all grain fodder in the litter. Open up the exit, and give them a chance to exercise in the open. Allow free range. Keep the house and surroundings clean and disinfected. Give frequent doses of Epsom salts, and give individual doses of Epsom salts to affected individuals.

Quite frequently, especially in the spring, when the birds are laying heavily and good sized eggs, some of the best layers, more frequently pullets, in laying, force out the inside of the lower portion of the oviduct, causing the everted portions of the oviduct to project from the vent. Other hens, noticing this, soon learn to pick at it, and in this way rupture the blood veins in the same, causing the bird to die, either due to loss of blood or blood poisoning. I have known cases like this, immediately after the hen came from the nest, upon catching, and with clean hands pushing it back into the oviduct, and keeping the hen separate from the rest, to do perfectly until the next egg was laid, when the oviduct would again be everted. Since then we kill all such as soon as discovered; at this time they are perfectly good and fit for eating. This, however, is not true after this case has been allowed to run for several days. Of course minor cases of evertion of oviduct may be cured by replacing the organ and keeping the bird for a few days in a dark coop, feeding slightly, and not force for egg production. We have only been able to cure prolapsus of oviduct, when the same was only in a small degree, or in other words only a very small part of the oviduct was everted. When several inches were everted, we have found it impractical to attempt to cure it.

It is generally caused by a weakening of the muscles in the oviduct walls and in connection with abnormal or unnatural straining of these muscles when laying. Sometimes a large egg or a double yolked egg, on account of its size, makes it difficult for the muscles to eject the egg and often in so doing rupture the walls. There are other causes, but by far the most important is the straining of the rather weak muscles in the walls of the oviduct. This ailment is prevalent in the springtime because at this time the fowls are laying the heaviest. Then, too, it is at this time that a large number of pullets lay for the first time. Although the trouble appears most frequently among pullets beginning to lay, it is also found very frequently among hens.

It has been stated that feeding plenty of green food has a tendency to prevent it. Some say the feeding of raw potatoes is beneficial. We, however, doubt the usefulness of either of these for this purpose.

We are, however, positive that dark and secluded nests are a great aid in prevetning prolapsus of the oviduct. Confined birds are much more subject to it than birds on free range. Allow

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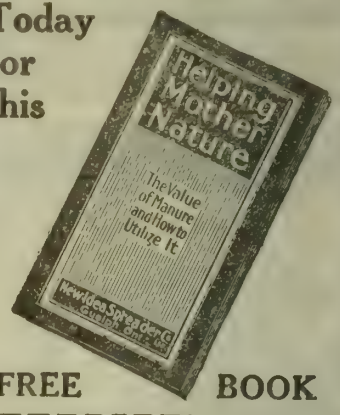

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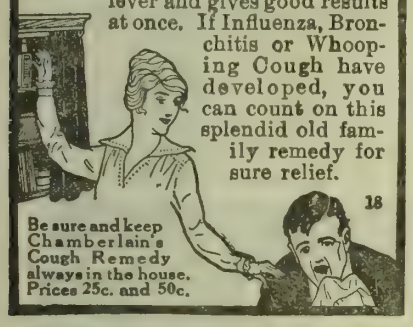

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your birds unrestricted range, and separate al lsuch as have a tendency to evert the oviduct while laying, from the rest of the folck. Sometimes only a very little eversion causes the other birds to pick at the same, and thus prove fatal. Do not feed too heavily of animal food, as the same has the tendency to increase the size of the eggs to some extent.

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If you have an incubator get it out from its storage place and give it a thorough cleaning. See that la[illegible] are working all right. Burners should be replaced with new ones whenever there is any doubt as to their being in perfect working order. New wicks should be ordered and a supply kept on hand. Thermostadts should be tested and the tanks, if hot water machines, tested for leaks. If hot air, the machine should be run a few days and tested as to its ability to retain proper temperature. Egg trays should be gathered up and all given a thorough washing in strong soap suds and dried before a warm fire. Chick trays all should be covered with new cloth. The body of the machine should be washed out thoroughly with strong soap suds, using a scrubbing brush to get into the corners and crevices.

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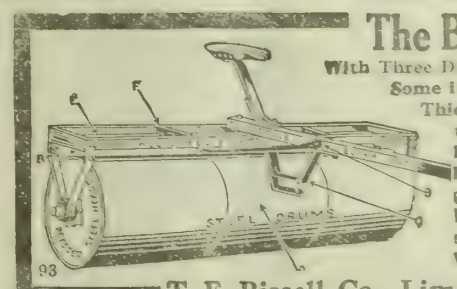

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Two on a Rancho

(By Brevard Mays Connor)

The first moment he saw her, he disliked her violently. He scowled at her as she descended from the station bus in front of the sanatorium, and sank weakly into the one vacant chair under the rusty catalpas. She should have known that those chairs were placed there especially for the men, and he had been just on the point of taking that seat himself.

When she coughed and leaned back wearily, he sneered. His own cough was deeper than hers, his hands more bony, his skin more fever-flushed and transparent; so he felt no pity, only a rush of rage that she should so openly advertise her weakness.

Then she slowly turned her head, and the pale-blue eyes widened with interest as they took him in. He knew she was recognizing those unmistakable signs that hung like shadows over herself, and he resented it with all the feeble rage of the very ill. He was just on the point of going over and demanding the chair when she stood up, and throwing him a smile of sad understanding, moved slowly into the building.

All afternoon he sat there under the catalpas and frowned at the drowsing plaza. It had been a most unpleasant day even from early morning, when that old, tottering, white-haired Ananias had buttonholed him and, gloating, had boasted that the doctors gave him only three weeks more.

Gordon Barlow's doctors had given him six months; and the contemplation of the shortness of his remaining terrestrial stay, even though a morbid one, was the only pleasure that remained. People always shuddeerd when he told them. And now this old man came vaunting his three weeks! It was disgusting, the way some people were always flinging their troubles in the very faces of chance acquaintances.

A dog, a disreputable pariah of the streets, his every rib visible, and his meek tail between his legs, slunk up and lay at Barlow's feet.

'Get away, you beast!" he snarled, thrusting the creature off with his cane.

The very dogs were like the people, airing their misery everywhere. He would get out of the place; it was too crowded, and the climate was abominable. He swore at the heat none the less vehemently because under his breath.

It was hot! Although it was late September, and palms in the plaza drooped under the relentless sun, and the paved streets smoked dizzily. He would go somewhere, anywhere—it didn't matter where, when there was only six months more.

"Get!" he snarled and waved his cane at the sad-eyed cur, which had returned and was gazing wistfully at the patch of shade alongside his chair.

There was a soft cough behind him.

"Oh, please don't hurt him!"

It was a husky voice—a woman's. He was sure it was she, before he turned.

"Is it your dog?" he demanded, glaring into the faded blue eyes.

"No, it's not mine," she said.

"I think you'd be ashamed to admit it if it was."

She did not seem to take offence, but came and sat in the next chair, which was now vacant.

"I wish he was my dog!" she whispered huskily, cupping her chin in her palms.

"What would you want with a beast like that?"

He waved his cane at the intruder again.

"He'd be mine," she replied simply, and as if the sequence was perfectly natural. "You see, I've never had a dog, or anything like that."

'Humph!" he snorted, suspicious of sentiment. "That's just like a woman, always wanting something she has n' use for. As for me, I don't care if I never have anything else. What good would it do me, when I've only six months to live?"

He watched her covertly, triumphantly.

"That's just how loing they gave me," she replied listlessly.

He was on his feet in an instant.

"I don't believe it! You look strong—much stronger than I do. Why—why, you'll live years yet!"

Trailing off into a sputter, he stumped off, fuming.

He had hoped to hurt her, or at least to surprise her, but she didn't even raise her eyes as he left—he looked back to see—and this made him more angry than ever. Indeed, he was so angry that he walked entirely round the plaza without stopping—which was very foolish, for afterwards, when his rage cooled down, he was so tired tht he had to take to his bed.

He told her of this proof of his weakness when they met again that night, and he was hardly able to restrain his glee in the telling. The front porch and the chairs under the catalpas were crowded, so he led her over to a bench on the plaza, poohpoohing her listless objections.

"Night air? Bosh! Night air can't make or break us now! So what's the difference? Besides, we'd be bored to death with that bunch."

Above, the sky was so clear that the myriad stars were reflected in the little pools left by the watering-carts. A hot breeze, stealing from the south, brought with it the faint crack of rifles, and now and then the heavier boom of cannon, marking the last desperate stand of the insurrectos. She listened attentively, for it was still new to her.

"Doesn't it seem awful for healthy people to pant to kill one another?" she whispered, as if awed.

All his bitterness welled up in a sudden, poignant cry.

"A healthy man! Just think what a healthy man, a strong man, can do!" He wrenched his hands until the knuckles gleamed white in the glare of the arc-light, while his dark, feverbrightened eyes glowed like twin coals beneath his heavy knitted brows. "Just think of being able to plan things, and to know that you will have the strength to carry them out! There were so many things I had dreamed of doing, so many things—"

Across the river there was a sudden outburst of firing, which died away as quickly. In the shrubbery behind, a girl laughed. The woman shivered.

"Are you cold?" he asked.

"No, no, not cold!" With a little trembling cry of relief, she added: "Oh, look, there is our dog! I believe he knows us. Here, boy!"

At the snap of her fingers the cur came forward, wagging his tail with open-hearted camaraderie. She opened her hand-bag and took out a little package, which, unrolled, proved ot be a bit of bread and meat. Greedily the dog snapped it from her fingers.

Shame, sir!" she cried. "a w,'xwqx'

"Shame sir, she chided. "You have no maners. Now if you were my dog—I wish you were my dog!"

"You'd soon find out what fleas were," snapped Barlow. "I'm going to take my good night constitutional. Good-bye!"

II.

Gordon Barlow was naturally abrupt, but in this case his hasty departure was due to pure fright. He had always fled from the tender tone, and the softer view of life, even before the shadow had fallen upon him and soured what had been naturally sweet. Life had always appeared to him as a battle wherein achievement had to be carved out with all one's unresting strength. The height of human happiness, to his mind, was seeking to achieve by means of the fiercest struggle of which he was capable.

He had been educated for an engineer, had dreamed of taking rugged nature and making it plastic to his will; but where his strong spirit longed to build, his frail flesh betrayed him, and so he cast his dreams away and laughed at them cynically.

But this cynicism, this delight in his hopeless condition, was only a mask which pride made imeprative. Beneath, the fire burned all the more fiercely for the darkness which enshrouded him. This woman's weariness, her lack of energy, her passive acecptance of the inevitable, irritated him.

That, in turn, made him wonder why he should care enough about such an inconsequential person to be irritated. He believed in the doll theory concerning women—that they were valuable in proportion to their physical attractiveness; and this woman lacked entirely the color and curves and bloom that were his conception of feminine assets.

This thought evidently sobered him, for this time he made the circuit of the plaza much more leisurely and sanely. Several times he stopped beneath the blazing arc-lights to read the moving-picture lithographs. His sluggist blood quickened to the lively tunes of the automatic piano.

Once he glanced back at the group of soldiers elbowing their way along, carefree in their surety of health. He smiled to himself. He knew the futility of that suerty. It had once possessed him; and he turned back with a pang that they should waste with such abandon moments that could be so precious to one who could really make some use of them.

As he was strolling slowly back toward the sanitarium, his head bent forward on his breast, a hand touched his arm.

"'Ello, senor, you been in El Paso long, si? I did not know."

Barlow found himself looking down into the swarthy face of one of our neighbors across the border.

"What are you doing here, Miguel?" he asked in surprise.

The Mexican shrugged his shoulders mournfully.

"My mother's sister's husband, he was sick. We bury him today.' Miguel put away the sorrows of the world with another shrug, and looked up with a charming, white-toothed smile. "Senor will go out to the rancho, si?"

The sight of this man had brought to Barlow's mind a long-forgotten piece of property. It was an inheritance from an uncle who had an inexplicable liking for the fastnesses of northwestern Mexico. Its present possessor had only once been persuaded to visit it.

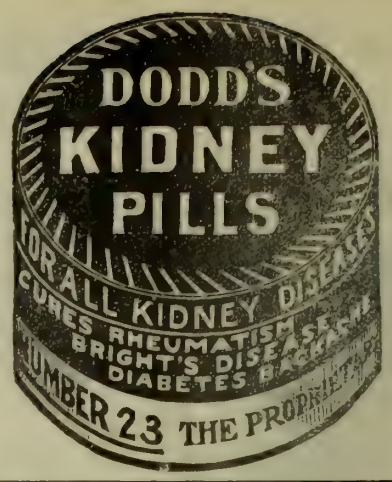
His rancho! He remembered it as a wild, inaccessible place amid barren hills, which he had rejoiced to leave; but now the sound of the words vaguely appealed to him. He had said that he wanted to leave El Paso. Well, here was just what he was looking for.

"I am at the Sanitarium Alfores, Miguel," he said abruptly. "Come the day after tomorrow, and I will go to the rancho with you."

Miguel bowed his delight, while his eyes narrowed with a world of good-natured understanding.

"And senor will take a—a leddy?"

Barlow glanced at him sharply. Then he remembered. This had been one of the avuncular failings.



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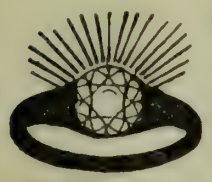

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Yours truly,
St. Joseph, P.O., 18th Aug., 1900.

"Senor will not take a lady!" he snapped, and turned away, while Miguel bowed his apology.

The girl was still sitting where he had left her, with the dog curled up at her feet, fast asleep. Triumphantly he told of his plans to leave, of Miguel and the rancho, and the wild mountains and stretches of uninhabited country. Her dull eyes brightened for a moment.

"It must be wonderful out there! I've never been able to get out into the country, and I've always wanted to make things grow. I had a geranium in a pot at the hospital, but a little girl loved it so much that we—we buried it in her arms." His snort was poorly concealed, and she turned quickly, abashed. "But won't it be lonely out there, and dangerous, with all the fighting going on.

"I want it to be lonely," he said, biting his nails. "And as for the fighting"—he touched his breast—"I carry a passport here that people respect. I won't be entirely alone, anyhow. There are Miguel and his wife."

The cur awoke sudednly, and industriously sought the cause of his disturbance with a hind leg.

"Why don't you take a dog?" she asked.

"I wouldn't have a dog!" he almost shouted, and went to bed.

III.

She didn't appear until very late the next day, Barlow, who had wandered about restlessly, with the germ of an idea working in his brain, greeted her coldly, as if she had failed him personally.

"I was so weak," she explained, "I just couldn't get up."

He grunted.

"But I watched you from the window," she went on. "I saw you feed our dog."

"Is that a criminal act?" he shot back testily, and glowered at the beast who lay at his fete watching him with eyes filled with adoration. "Why do you call him our dog? He probably belongs to somebody, and you are liable to get in trouble if you try to claim him."

She turned eyes sudednly tear-filled upon him.

"Oh, do you think so? Do you really think I couldn't have him? I've never had a dog!"

"So you have told me several times," he retorted cruelly, and fell into silence, biting his under lip fiercely.

The germ of an idea was full-born. He was thinking it over.

He had to admit that it was an astounding idea, but when he came to voice it he did so calmly and judiciously.

"I've decided that it will be lonely on the rancho with only those two Mexicans for company. I should probably get very morose and morbid and unhappy, and I wouldn't like to feel that way up to the end. So I've decided that I want to take—"

"The dog?" she questioned breathlessly.

"No, not the dog. I want to take you."

She studied him for a long while in a sort of dull wonder.

'Don't be conventional," he cried, "and ask what people would say! We won't give them a chance to say anything. We'll get married before we start. Don't misunderstand me. This is an affair entirely of convenience; there is no sentiment in it, on either side. I would prefer not to have people talk, for my family's sake; for my own I don't care a cent. We are too near the edge of the world to be bothered personally about the world's laws. All this is at our backs."

She was running her pale-veined hands through the dog's hair.

"How do you know that my being out there will make you happier?"

That was getting too near the path of sentiment that he so rigorously avoided, so he set her right again, clearly, cruelly.

"Neither you nor anybody else has the power to make me happy. I chose to ask you because your going seems more convenient. There isn't much else that you can do, and you have already said you would like to get out in the country and—and make things grow. Well, you would probably be much happier there than here and you would help me by keeping my mind off myself, more or less. And don't say that I don't know anything about you, or what you used to be, or whether you are low-born or high-born. I am not marrying you for a wife, you understand, and so all those things could have no effect. My nurse told me that your name is Jane Robertson, and that you used to work in a hospital. The last is superfluous, but I needed to know your name to have it put on the license. Kindly be ready in the parlor at ten o'clock tomorrow morning. It has to be early, so that we can make our train. Now I'm going to take my walk!"

She looked up with a pleading smile.

"Could—could I take the dog?"

He frowned at the sudedn little rush of heat that warmed his heart.

"Of course! Take a whole pack, if you wish!"

"Oh!" she breathed gratefully, pressing the cur's head against her knees. "Oh, thanks!"

He grumbled to himself all the way around the plaza.

(Continued in Nex Issue).

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A Good Roast from Tough Cut.

An excellent roast may be made from a very tough cut of beef by the following method:

Select a thick cut of the lower round or any other portion that is without bone (this should be 3 or 4 inches thick). Pound flour into the meat on both sides (about 1½ cups of flour can be pounded into a 3 or 4 pound piece). The pounding breaks up the fibre and the flour retains the juices. Sear the meat all over and place in a roaster. Pour the contents of a can of tomatoes over the meat. Onions and other seasonings may be added. This makes a tender roast and excellent gravy. It also is very good when sliced cold.

Big Ben

—took first
prize in the alarm clock class at the San Francisco fair.

Big Ben was shown every day of the fair, almost ten months. He was judged on appearance, performance, pedigree. He carried off the Medal of Honor, the highest award on alarm clocks.

Big Ben is shown by all good dealers. Ask to have him put through his paces. In the United States $2.50. In Canada $3.00.

Western Clock Co.
La Salle, Illinois Makers of Westclox

When the Back Becomes Lame

IT IS A SIGN OF KIDNEY TROUBLE

Doan's Kidney Pills cure the aching back by curing the aching kidneys beneath—for it is really the kidneys aching and not the back.

Doan's Kidney Pills are a special kidney and bladder medicine for the cure of all kidney troubles.

Mrs. Louisa Gomshaw, 683 Manning Ave., Toronto, Ont., writes: "I take great pleasure in writing you, stating the benefit I have received by using Doan's Kidney Pills. About three years ago I was terribly afflicted with lame back, and was so bad I could not even sweep the floor. I was advised to try your pills, and before I had used one box there was a great improvement, and my back was much better. However, I kept on taking them until my back was completely cured. I highly recommend 'Doan's' for lame back."

Doan's Kidney Pills are the original pill for the kidneys. See that our trade mark the "Maple Leaf" appears on the wrapper.

Doan's Kidney Pills are 50c per box, 3 boxes for $1.25; at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

When ordering direct specify "Doan's."

Nourishing School Lunches.

Hardly too much can be written or said on the subject of school lunches. We all know school children need nourishing food but some way it is easier for so many to stick anything which is at hand into the boys' and girl's lunch pails the last minute instead of using a little forethought. Oftentimes it chiefly consists of pie and cake because those are articles handiest. Where it is possible in the home, the main meal should be at night, during the school year, so the children may be sure of at least one hot nourishing meal aday.

Whatever kind of receptacle is chosen for carrying the lunch, choose one fairly good sized. The fibre boxes are apt to retain odors, wicker ones let the food dry, so tin seems about the best all-around material. Waxed paper is cheap and will keep the lunch dainty and appetizing; jelly cups with covers are convenient to hold food which is moist and hard to pack. If your pocketbook will permit it a bottle which keeps liquids either hot or cold, as you choose, should be included in the outfit.

Every lunch should have some substantial food like sandwiches, some succulent food like fruit, fresh or canned, lettuce, or tomatoes and a dessert, which may be cake, candy, nuts and raisins, cookies or pudding.

Sandwiches may be varied, first by using different kinds of bread, white, brown, graham, rye, nut, raisin, etc., and secondly by different fillings. The latter are innumerable.

All kinds of meat, which may be sliced, chopped or ground and softeden with cream or salad dressing; fish, as sardines or salmon; eggs, boiled, sliced and seasoned, fried or chopp.d and moistened with salad dressing; all kinds of cheese; lettuce and cress in season; jellies, jams, fig paste and raisins; peanut butter and baked beans make good fillings. A sandwich should always be made neatly of thinly sliced bread. The fololwing are excellent recipes:

Egg Filling—Three eggs, hard boiled and chopped fine or ground; an equal amount of chopped or ground boiled ham, salad dressing, mix and spread.

Raisin Filling—One cup raisins ground or chopped, one-half cup water, one-half cup sugar, one tablespoon flour moistened with vinegar, juice and grated rind of one lemon, cook in a double boiler until thick.

Egg Filling—Scrambled egg with crisp bacon.

Chicken Sandwich Filling.—Chop cold boiled chicken, and moisten with salad dressing; or season with salt and pepper and moisten with rich chicken stock. Chopped cold boiled chicken and ham, mixed with creamed butter, makes a delicious filling.

Club Sandwiches — Arrange on slices of bread (toasted or untoasted) thin slices of cooked bacon; cover with slices or roast chicken and cover chicken with salad dressing. Place a slice of bread on top.

Tomtao Sandwich Filling.—One quart can of tomatoes boiled down to one cup, one-half pound American cheese and one-half pound dried beef, ground together. Mix and add salt and pepper, boil to desired thickness for spreading. When cool, beat in one egg.

Plain bread and butter with sliced meat or deviled eggs is relished. Celery, radishes and occasionally a small amount of pickle may be added to the lunch.

All kinds of fruit are good, particularly the fresh. If preserves are used, it is well to put them in one of the half pint preserve jars as there is less danger of spilling than in a jelly cup. Many kinds of pudding may be put in a jar of that kind and are a change. Cup custards can be sent in the cup they are baked in.

A few nut meats, dates, figs, raisins always liked by children and are very nutritious.

Time and care spent on your child's lunch are time and care well spent. No engineer expects his engine to do its best unless it has plenty of coal and coal of a suitable kind. The same is true of your child's body. Nutritious food to make good rich blood is a neccesity if physical health and good work in school are desired.

The Value of a Smile.

I heard the other day of the failure of a business man. It came as a surprise to everyone, for his store was one patronized by the rich and he was supopsed to be making money. Among the conjectures as to the cause of his failure this one was expressed:

"He never smiled. Haven't you ever noticed it? A customer would go in the store and he would greet them with a face that said plainer than words: 'Joy is dead, didn't you know it?' I never left his place without a queer, uncanny feeling following me, and wondering what on earth was the matter with him and I tell you I never went there oftener than I had to."

We have all experienced it, the depressing sensation following intercourse with a negative person, and then how pleasant and joyous to meet with the one "who wears a smile." It need not be the senseless grin which means nothing. I have known both men and women who smiled with their lips, but whose eyes were as cold and chilling as steel points. It is the person who radiates good cheer, whose every act seems to express that life is good, and that joy awaits everywhere and in everything if we but look for it. It is not necessary to wear a pair of poor Sam Weller's "patent double mill liom glass microscopes of hexrta power," either, to find this joy. I once knew a man who was the very soul of goodness, and who everyone that knew him loved. He did not smile often, indeed, his face was rather serious, for he was a deep thinker, but his eyes* Why, they danced hornpipes with appreciation of any and everything good and lovely and he saw beauty in all things, from the life of a little insect in the path at his feet, in the .blue of the sky, or the song of a bird.

A cheerful visage in the morning, eager to meet the day's duties and problems, must shed its beneficent influence over everyone with whom we have to to, inspiring and encouraging them to do their best also. With this thought to follow us, how light our own difficulties and trials will appear, for after all it is goodness and love that really control the world, if we only make that rule appear in our own lives.

MAGIC BAKING POWDER
Magic Baking Powder costs no more than the ordinary kinds. For economy, buy the one pound tins.
MADE IN CANADA
E.W.GILLETT COMPANY LIMITED
WINNIPEG TORONTO ONT. MONTREAL
MAGIC BAKING POWDER
CONTAINS NO ALUM
REFUSE SUBSTITUTES

A cheerful visage in the morning, eager to meet the day's duties and problems, must shed its beneficient influence over everyone with whom we have to do, inspiring and encouraging them to do their best also. With this thought to follow us, how light our own difficulties and trials will appear, for after all it is goodness and love that really control the world, if we only make that rule appear in our own lives.

Smile a little, smile a little
Do your very best:
Surely all things, good and lovely
Come at your behest.

A SERIOUS ERROR

"You've made a serious mistake in your paper," said the indignant man, entering the editorial sanctum. "I was one of the competitors at the athletic match yesterday and you have called me the well known lightweight champion."

"Well, aren't you?" said the editor.

"No; I'm nothing of the kind; and it's confoundedly awkward, because, you see, I'm a coal merchant."

STRAWBERRY PLANTS!

Growers of Strawberries in the Maritime Provinces receive fifty per cent. more for their fruit than farmers in Ontario. Our soil is just as suitable, our climate just as favorable for big crops as theirs. No one should talk of hard times who is not living up to his opportunities.

In berry growing good soil, good care and cultivation and good plants are all the essentials of success; but as the stream cannot rise higher than its source, so without first-class well grown plants good returns for labor cannot be expected. We can prove by many satisfied customers that the grower who buys plants from us is starting on the right road for a big berry crop.

We offer the Senator Dunlap, the most widely grown and popular berry in America at $3.50 a thousand. In orders of five thousand or over, $3.25 a thousand. We have also Arnout, Williams, Valeria, etc , the old standbys and the best new kinds.

Send for descriptive Catalogue and Price List, it's FREE.

CYRUS & MANNING ELLS, - Port Williams, Nova Scotia

The Syrup of a Hundred Uses

Of course, "Crown Brand" is your favorité Table Syrup. Of course, you enjoy its delicious, appetizing flavor with *Bread, Pancakes and Hot Biscuits.*

But what about "Crown Brand" in the kitchen? Do you use

EDWARDSBURG "CROWN BRAND" CORN SYRUP

for Gingerbread, Cookies, Cakes, Pies and Sweet Sauces for all kinds of Puddings?

Do you always use it for *Candy-making*?

Try it in all these ways. You'll find "Crown Brand" Corn Syrup handy, convenient, economical, dependable, good.

"LILY WHITE" is just what its name implies—a clear corn syrup—more delicate in flavor than "Crown Brand", that is equally good for the table and for candy-making.

ASK YOUR GROCER—IN 2, 5, 10 AND 20 POUND TINS.

The Canada Starch Co. Limited, Montreal.

Results Of Good Seed.

(By F. C. Nunnick, Agriculturist, Commisison of Conservation.)

During the past three years the Commission of Conservation has conducted illustration work on a number of farms in Canada. The question of good seed and seed selection has received particular attention. From the reports of twenty-three of the farmers who have been doing illustration work in the five Eastern Provinces many valuable facts have been secured.

Sixteen of the men stated that they had not previously been sowing the varieties and strains of grain on their farms to give best results and eighteen say they are now sowing varieties which are more suitable to them and their neighborhood.

Only three claim to have been sowing selected seed before beginning work with the Commission, while now every man is sowing selected or registered seed and states that it pays him in bigger and better crops. All of the men say that good seed has become something of much greater importance to them than previously. This is something which cannot fail to have lasting and far-reaching results in each community.

The following are extracts from the letters received from the farmers themselves:

Nelson Peterson, Kingston, Ont.: "Three years ago, I thought I was sowing good seed; now I find it pays to sow the best that can be had."

George R. Barrie, Galt, Ont.: "As to Indian corn: It is cheaper to pay $10 per bushel for good kilndried corn than to sow the shelled corn that is sold in the stores. Two acres sown with selected corn purchased on the cub, costing $2.50 to $3.00 per bushel gave almost twice as much weight of ensilage as two acres sown with shelled corn in sacks and costing about $1.50 per bushel."

W. T. Hands, Perth, Ont.: "We have not changed varieties of seed, but we are now sowing nothing but registered seed. We find we have better results and that it pays. Last spring we sold about 400 bushels of oats at $1.25 per bushel and 200 bushels of barley at $1.00 and $1.25 per bushel."

Whittiker Bros., Williamsburg, Ont.: "The tests with corn have proven to us that it is cheapest to buy the best seed corn possible; it matters not what the price may be."

Chester H. Keith, Corn Hill, N.B.: "I am now sowing the best seed whereas I used to sow seed of inferior quality. This is one way the Commission of Conservation has helped, not only me, but a number of neighbors, in obtaining good seed grain."

Taylor Bros., Antigonish, N.S.: "We have been sowing selected seed for the past eight or ten years; on the average our yields have been a full 50 per cent greater than they were before."

Cuba And Canada.

These two ambitious nations, one leading the world in the production of sugar and the other in the production of wheat, should be better acquainted with each other. These two young countries, Canada as at present constituted, not yet fifty years old; and Cuba as a republic less than twenty; not satisfied with leading the world in the production of sugar and wheat, are running very close in the endeavor to lead the world in the amount of trade per head, Canada showing an annual export and import trade of $140.00 per head of population and Cuba slightly in advance, showing $145 per head.

We should know each other better commercially; as nearly all the products of Cuba, viz.: sugar, tobacco and tropical fruits, Canada needs to buy; while nearly all the products of Canada, viz.: lumber, paper, coal, iron, steel, machinery, cement, fish, hay, oats flour potatoes, butter, cheese, eggs, canned meats, vegetables and fruits, Cuba needs to buy; and because the products of these two countries are so entirely different, their trade with each other would be greatly to the advantage of both.

We should be better acquainted socially. It would be well if the people of these two countries knew each other better. Canada has many attractions that would appeal to the people of Cuba. To the sportsmen the hunting and fishing of Canada, which are unexcelled, would be the chief attraction. To others the attractions of our Canadian winter would appeal, with its skating, snowshoeing, sleighing and tobogganing. To others our beautiful rivers, lakes, mountains and valleys would be a never-ending delight and, once seen and enjoyed, there would always be a desire to visit them again. On the other hand, I do not know of any trip a Canadian could take that would be as enjoyable as a trip to Cuba, especially during our Canadian winter. The principal charm of the visit would be that he will find everything different to what he is accustomed. The country and its products are different. The climate is different, as he will find perpetual summer here. The customs, language and disposition of the people are different from our own. The fruits, plants, trees, flowers and birds are different. The houses, streets and markets are different and the street scenes, with its mixture of ancient and modern, will be a source of never-ending wonder to the Canadian visitor, and a visit to the country where you are never out of sight of the palm trees wherever you travel in Cuba, is something never to be forgotten. A person from the north who spends a few months in Cuba and enjoys the hospitality of its people, always plans to return again at some future time.

(Signed) J. C. MANZER,
Commercial Representative in Cuba for the Government of New Brunswick. Lonja No. 203, P.O. Box 1290, Havana, Cuba.

Cuban Sugar Prospect.

Cuba's sugar mills, or Centrals, as they are called here, are busily engaged in grinding the largest crop of sugar cane ever produced on the Island. As the result of the high prices which have prevailed for the last eighteen months, the acreage has been largely increased. A. A. Himely, Cuban representative for the Federal Sugar Refinery of New York, considered to be the best posted man in Cuba on the sugar situation, estimates the 1916 sugar crop at 3,175,429 long tons, or about 22,214,000 socks.

To handle this immense quantity of sugar will require over 1,200 steamers of an average capacity of 18,000 sacks each. At the prevailing prices. which are about 3¾ cents per pound, f.o.b. steamer, the crop will be worth $266,568,000 or an average of over $100.00 for every man, woman and child on the island. This will be an increase of over $100,000,000 in the value of this year's sugar crop over the crop of 1914.

Profits from the Deering Disk

Deering Tillage Tools

THERE is more than one good reason why so many farmers use **Deering** disk harrows and other **Deering** tillage implements, but all those reasons can be summed up in one word—Profits.

There is profit in disking some fields before plowing.
There is profit in a well-disked seed bed for grain.
There is profit in making surface mulch to conserve moisture.

The fact that these profits show only at marketing time, takes nothing from the credit of the **Deering** disk harrow which is really responsible for them. The **Deering** disk, with its bowed set-lever bars, its easily adjustable snubbing blocks, and its direct, right-angle pull on the bearings, does the work that finally results in a heavier stand of better grain, which sells at a higher price and better profit, than if the **Deering** disk had not been properly used.

Think it over and buy your tillage implements from the **Deering** local agent for this spring's work. Quality counts, and quality runs through the whole **Deering** line of disks, peg and spring-tooth harrows, cultivators, scufflers and land rollers. Write us at the nearest branch house for catalogues but do not fail to see the **Deering** tillage line before you buy.

International Harvester Company of Canada, Ltd.
BRANCH HOUSES
At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton

Following you will find a statement of the estimated shipments from the different ports of Cuba:

Ports.	Centrals.	Bags.
Mantanzas	30	3,596,000
Cienfuegos	25	3,045,000
Cardenas	19	2,705,000
Havana	21	1,698,000
Sagua	21	1,415,000
Caibarien	15	1,269,000
Antilla & Nipe Bay.	14	1,930,000
Jucaro	5	1,170,000
Puerto Padre	2	1,120,000
Manzanillo	9	872,000
Guantanamo	12	779,000
Banes	1	453,000
Nuevitas	2	425,000
Santiago de Cuba.	6	400,000
Gibara	1	390,000
Manati	1	380,000
Santa Cruz Del Sur.	1	350,000
Zaza	2	117,000
Trinidad	1	100,000
	188	22,214,000

Tons, 3,175,429.

SYDNEY BASIC SLAG

We strongly recommend all farmers to arrange for their supplies without delay. The demand is constantly increasing and it looks as if there will again be a shortage next season.

Our general Sales-agent for New Brunswick is :
MR. C. T. LOGAN, R. R. No. 1, Amherst, N. S.,
to whom all inquiries for agencies in New Brunswick should be addressed.

THE CROSS FERTILIZER CO., Limited,
SYDNEY, Nova Scotia.

RED ROSE TEA "is good tea"

Dietetics and Properly Balanced Menus

Food is anything which nourishes the body, it is necessary for growth, repair and energy. Therefore the elements composing the body must be found in the food. Food is classified as follows:

Organic

Proteid—Gives muscular tissue.

Carbohydrates, fats and oils—Oxitized to give heat and energy.

Inorganic

Mineral matter and water.

We all know the pleasant sensation given by a satisfactory meal; it comes from the perfect adaptation of the foods to the needs of the system. If food was always selected, prepared and combined to conform to our bodily needs, we should be, barring accidents perfectly nourished, healthy creatures. But imagine a mother saying each time she started to prepare a meal: "So much carbohydrates for John, and half as much proteid as fat for pa." Mothers, think they have enough to do to cook a wholesome well balanced meal for the family without this. Yet those families who labor find that certain foods have the power to sustain muscular vigor even though they do not reason out why soup always comes first at a dinner and dessert last. Everyone knows this is the most practical knowledge, but more and more women are inclining to learn reasons why.

To know how winter fare should vary from summer diet, how to brace the body to endure fatigue. or to repair wasted nerve forces through the diet, and when to urge the children to indulge in toothsome goodies is a woman's business.

A good place to review our daily food is at the breakfast table; if twelve hours have elapsed since the last meal and there are before us five hours of vigorous exercise and work, it is as plain as anything can be that this meal should be refreshing, strengthening and yet so light that it will not overload the stomach and dull the brain. "Milk, meat and eggs are the best muscle builders and strength producers with cereals and fruit, they give a well balanced diet. So eggs or bacon, with coffee containing cream and sugar, a cereal, bread and a baked apple would constitute a good breakfast in every sense. We have found that proteids, fats, starch, sugar, mineral salts and acids are all out diet contains, if we reduce it to its simplest elements and the following table will show what foods contain these nutrients.

Foods rich in sugar, carrots, beets, fruits, honey, syrups and sugar. Starch is found in all cereals, potatoes, etc., and this starch is changed into sugar, partially by cooking and then more completely changed after taken into the body.

Proteid is in nuts, meat, milk, and its products, eggs and in legumes.

Fat, our most highly concentrated food, is found in cheese, cream, butter, meat and oils. The most valuable pure fats are olive oil and nut oils; starved nerves, thin blood, and wasted flesh thrive upon them, they are purifying and healing. Summer or winter this pure fat may be taken in salads or some other form and the family kept in health with it.

The simplest and most powerful agent in determining the character of our food is the climate. In cold regions man requires such food as not only supplies him with nutriment, but also with heat, such as oil, butter, fat, sugar and other substances in which carbonaceous elements predominate. In warm countries, on the contrary, it is one of the most essential conditions of good health that the food should be as little heating as possible. In our own climate this law holds good, as between summer and winter; in the latter season plenty of meat, butter, potatoes, sugar and similar foods are necessary to keep the body in working order, while in summer the diet should consist chiefly of those substances of which flesh forming elements compose the largest part. There is probably no other cause so fruitful in producing dyspepsia and similar diseases of which we as a nation, are in a peculiar degree the victims, as the neglect to harmonize food with the ever changing seasons.

The relish for food is an important consideration. The relish for food involves two elements, the vigor of appetite and the attractiveness of the food in appearance and taste. When a person is hungry and the food meets his approval in its kind and in the way it is prepared, this causes an abundant flow of the secretions in the digestive tract. For this reason soup is served first at a dinner as it acts as a stimulant and increases the flow of gastric juice. Also appetizing odors when there is a strong desire to eat, promote the flow of the different secretions needed in digestion.

When on the other hand, the appetite is poor or the food distasteful, the intestinal juices receive no such stimulus. Unskilful or slovenly cooking or an unwise selection of food may neutralize a vigorous appetite or even breed dyspepsia.

One parental weakness that cannot be too strongly condemned is allowing a child to acquire the candy habit. It is true that pure candy is made of sugar, which, under right conditions may play an important part in the animal economy. But sugar of itself exercises no constructive function and when the free use of sweetmeats is permitted, a desire for wholesome food is much lessened and the child is robbed of the nutrition to which it is entitled. The eating habits of some children are abominable, and for these habits the parents are responsible. It is a trite saying but a true one, that the intelligent farmers' calves and pigs are fed more rationally than many children.

Now a person may determine what he shall eat from two points of view, viz.: He may select his food on the basis of rational consideration of health, or may sensuously follow the dictates of appetite. It is to be feared that the latter point of view largely prevails. Man does not seem to regulate his diet by an intuitive sense of what is best for his physical welfare, but in a large number of cases is the unfortunate victim of unbridled indulgence in that which most delights his taste, but eventually ruins his health. The housewife who keeps the following facts in mind may combine foods in a way that will fully meet the needs of the human organism of whatever age or condition.

1. Brain workers need easily digestible food. Muscle workers find coarser food better suited to their needs.

Chippendale—Style 75

Proof of $100 Saving

We believe that if we can put into your hands positive proof of our ability to save you $100 on the price of a piano, you will be interested.

Here is our plain statement:

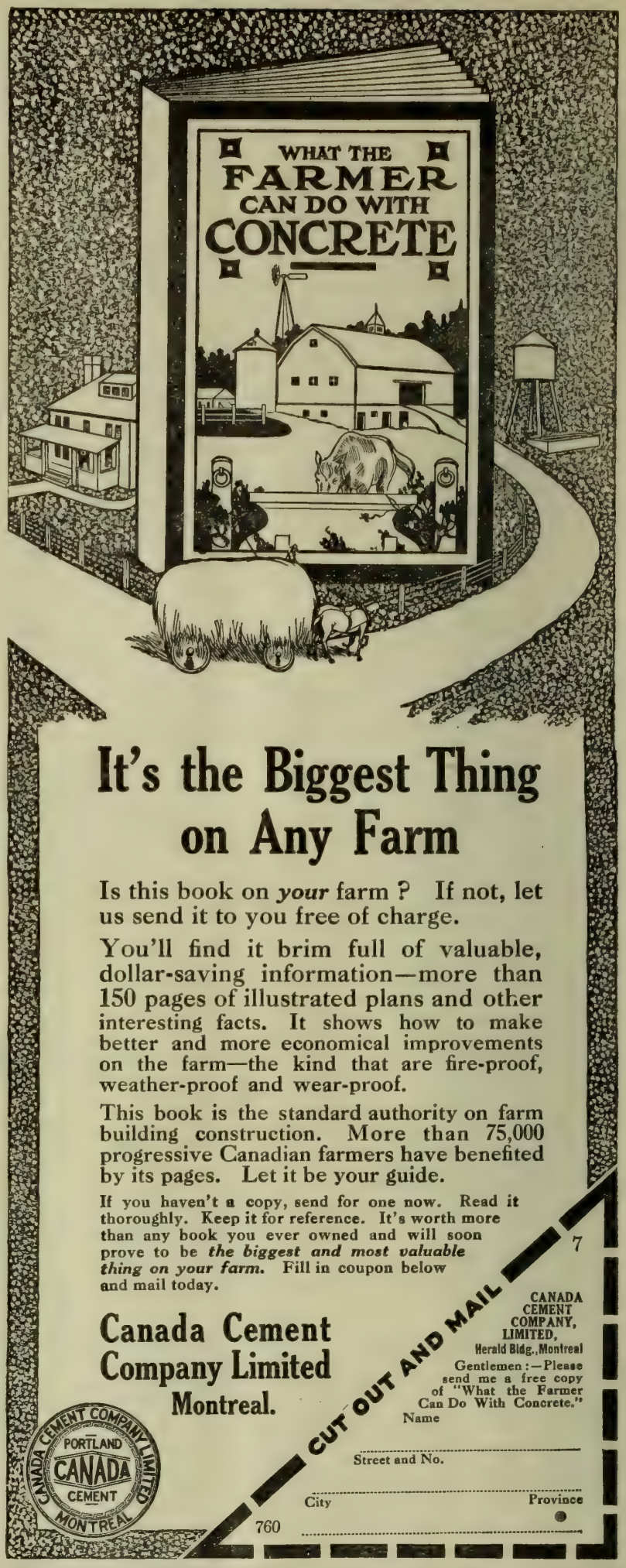
The Sherlock-Manning 20th Century Piano

"Canada Biggest Piano Value" is the height of achievement in case, tone, finish, wormanship, durability, action, hammers, strings—any and every part; and you get it for $100 less, backed by a ten-year guarantee.

WRITE FOR THE PROOF

Write Department 6 for our handsome Art Catalogue "J," and it comes to you by return mail with satisfactory proof of every claim we make.

Sherlock-Manning Piano Co.,
London, Canada.
(No street address necessary.)



It's the Biggest Thing on Any Farm

Is this book on *your* farm ? If not, let us send it to you free of charge.

You'll find it brim full of valuable, dollar-saving information—more than 150 pages of illustrated plans and other interesting facts. It shows how to make better and more economical improvements on the farm—the kind that are fire-proof, weather-proof and wear-proof.

This book is the standard authority on farm building construction. More than 75,000 progressive Canadian farmers have benefited by its pages. Let it be your guide.

If you haven't a copy, send for one now. Read it thoroughly. Keep it for reference. It's worth more than any book you ever owned and will soon prove to be *the biggest and most valuable thing on your farm.* Fill in coupon below and mail today.

Canada Cement Company Limited
Montreal.

CUT OUT AND MAIL

CANADA CEMENT COMPANY, LIMITED,
Herald Bldg., Montreal

Gentlemen:—Please send me a free copy of "What the Farmer Can Do With Concrete."

Name .....

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2. No one meal need be "balanced," that is need contain proteids, carbohydrates and fats in a certain proportion, but each day's dietary should approach the proportion of one part proteid to five and a half parts carbohydrates.

3. Diet should be varied as well as mixed: i.e., do nto depend too much on potatoes for starch, serve rice or macaroni instead.

4. When planning a meal, think what has been served at the preceeding one. If starchy foods chiefly, supply plenty of proteid. Do not forget that butter, eggs, milk, etc., used in cooking, count as food just as much as if served by themselves at the table. By planning meals, in part at least, for several days ahead, you will find it easier to provide varied and rightly balanced fare.

5. Food is not necessarily nutritious in proportion to its cost.

6. Remember that plant proteid may take the place of animal proteid. If you have but a small piece of meat, serve peas or beans with it rather than beets.

7. Acid fruits should not be served with starchy food as the digestive action of the ptyalin of the saliva is retarded by the presence of an acid. For this reason dates, figs and bananas take first place as breakfast fruits, while mildly acid fruits such as grapes, pineapples, peaches, pears, sweet oranges and berries are second choice.

8. Familiarize yourself with the composition of common foods so that you may readily think of suitable combinations and know how to supply lack of one food by another of similar character.

The pleasures that a woman may give her family by a careful regard of these simple laws of food selection, are the most delightful of any though perhaps least appreciated. Good health is the most precious of all possessions and only to be had through a well chosen diet.

In almost any home the menus, when rationally judged, are seen to be more wasteful than any other department of family expenditure. The fact is we are so accustomed to certain eating habits that we do not realize how unnecessarily expensive they are.

The following is a menu that is simple according to the present standards of living but is much more elaborate than the diet upon which countless numbers of men and women have been well nourished.

Three meals, properly balanced, for six people.

Money allowed—$1.38.
Actual cost—$1.37.81.

Breakfast

Oatmeal Cream Sugar
Bread Cheese
Cereal Coffee

Dinner

Potato Soup Croutons
Mock Duck Brown Gravy.
Fried Potatoes Peas
Coffee Jelly Oatmeal Macaroons
Coffee

Supper

Salmon Croquettes
French Fried Potatoes
Rolls Apple Compote
Chocolate Cake. Cocoa.

Concentration.

"I've read my history three times and I don't know a word of it," said Tom.

Joe grinned. "That's because you read words and think of Saturday's football game. Wait till you get into one of Mr. Brown's classes in the high school, and you'll see."

"What will he see?" asked Aunt Mary.

"Mr. Brown won't let us read our history more than once," said Joe. "He says if your mind is open the first time, more knowledge will come in and settle in the one reading than if you dawdle over the same path a dozen times.

"Eyes aren't so hard to train as ears," Joe continued. "There's Frank Fiske in our class in school. His eyes went back on him, and he thought he'd have to drop out and not be graduated in June. Mr. Brown proposed that six of us fellows each take a lesson and study it aloud with Frank. I took Latin. It was hard at first, but now Frank can translate Virgil as fast with his ears as I acn with my eyes."

"I believe people train their sense of hearing less than any other faculty," said Aunt Mary. "In my Bible class of grown women, when I give out references there's only one in the class that catches the whole. She writes down book, chapter and verse as I give it. The others write the book and ask what chapter, or write the chapter and forget the verse."

"Mr. Brown ought to train them," declared Joe. "Whenever he gives us dictation, he doesn't deal out a word at a time. He reads a whole paragraph before we take up our pens, even, and then we get it as well as we can. I can write it almost straight now."

"Besides my Bible class," said Aunt Mary, "I'd like to send a great many shop clerks to him. When I give my name as Miss Sellars, and spell it for them, letter by letter, they blandly write, under my very nose, C-e-l-l-a-r s. They've never learned to hitch their ears to their hands.

"There's old Hepsy coming in. I owe her two dollars," continued Aunt Mary, "and my purse is upstairs. Please, Tom, go up to my room to the bureau at the left of the south window, and in the upper left hand drawer, in the box at the far right-hand drawer, you'll find my purse. Will you bring it to me?"

Joe laughed at Tom's bewildered look. 'I couldn't begin to remember all that, Aunt Mary," Tom said. "Tell me again."

Aunt Mary began slowly again, but before she was half through, Joe dropped the purse itno her lap.

"How could you remember?" demanded Tom.

"Only concentration again," answered Joe. "I listened a step at a time. Aunt Mary says 'upstaris,' and in my mind I go up and 'm there waiting for the next direction. She says 'my room,' and mentally I go in; and when she says 'bureau left of south window,' I'm there. Then it's easy to open the 'upper left-hand drawer,' and I'm ready for the back right-hand corner. I dont' take it as a mixed-up whole. I listen step by sted, and each step is a distinct picture of a separate action, and I take that action. I don't think of what's behind."

"I think perhaps I'll try that myself," said Tom.—Youth's Companion.

Who'll Whip You.

A lady of the capital city of A. said this happened in her own city: A lad came home with a pocketful of marbles he had won, and said, "Mother, see what I won."

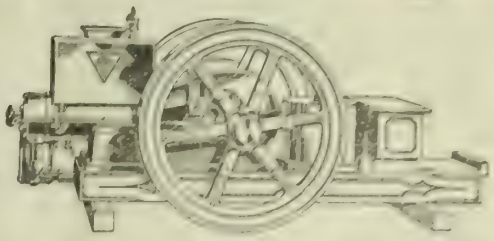
With a grieved voice she replied, "Son, did I not tell you you must not play marbles for keeps? I shall have to punish you for it. I am sorry to have to do it, but I cannot have you doing anythingof that kind. So come in here."

He went in and got what was coming to him. Then, when his voice was again manageable, he said, "Now, mother, I want to ask who is going to whip you for the prize you won at the card party and brought home."

Be sure she'll get what is coming to her, and it will be more than she will enjoy probably; maybe enough to break her heart. The little gambler is just following the example set him by the big gambler. When he gets to be a big gambler, the mother will have many heartaches.

Mother, are you guiltless? If you are a gambler, it is not probable that your boy will never think gambling a very great wrong even if the civil law does declare it a crime.—Ex.

Alpha Gas Engines

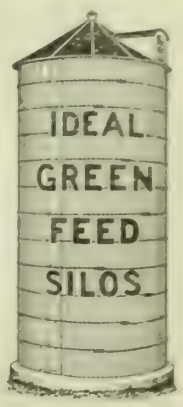


The Men Who Use Them Save Money

You can save money by using an Alpha Gas Engine just as do many other men. An Alpha Gas Engine is a saving investment any way you look at it. It will save money you now must pay out to get work done that requires power, because you can own and operate the engine at less cost than that of hiring some one with an engine.

It will do quickly work that you are now doing by hand and wasting a lot of valuable time over. It will pump water and do other similar jobs without attention and leave you free to get other work done. Your wife or your boy can start and operate it at many jobs to which you now must give your time. Having an engine will relieve you of the odd jobs that are time-wasters and give you more time to attend to the important work on your farm.

You need an engine and the sooner you buy one the quicker you will save the cost of the engine. Get an Alpha Gas Engine now, put it to work; and it will pay for itself in a few months. Ask for catalogue, prices and complete information.



Feed Silage

It is the best and cheapest feed for all kinds of live stock. Silage fed cows produce more milk at less cost than cows on any other feed. Stop the waste of your corn crop due to the fodder being dried and exposed to the weather and make the work of feeding easier by erecting an Ideal Green Feed Silo. It will pay for itself the first year and give you many years of service. Ask for catalogues that show why you get greater value for your money in this silo than in any other.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

More Potato Profits

MACHINERY may make all the difference between profit and no profit in growing potatoes. Get the right ones. We make complete lines of planting, weeding, cultivating, spraying, ridging and digging tools, all of which we guarantee. 80 years of factory and farm experience back of them. We'd like to tell you about all

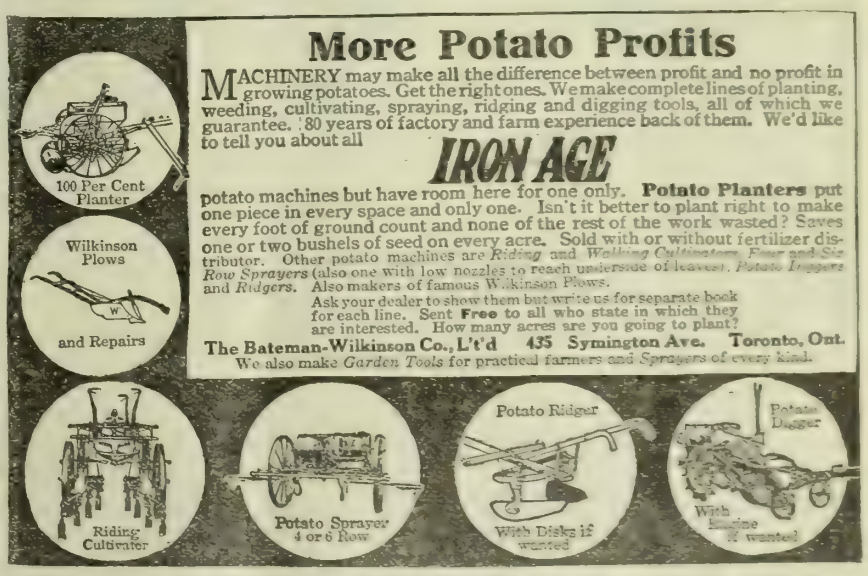
IRON AGE

potato machines but have room here for one only. **Potato Planters** put one piece in every space and only one. Isn't it better to plant right to make every foot of ground count and none of the rest of the work wasted? Saves one or two bushels of seed on every acre. Sold with or without fertilizer distributor. Other potato machines are *Riding* and *Walking Cultivators, Four and Six Row Sprayers* (also one with low nozzles to reach underside of leaves), *Potato Diggers* and *Ridgers*. Also makers of famous Wilkinson Plows.

Ask your dealer to show them but write us for separate book for each line. Sent **Free** to all who state in which they are interested. How many acres are you going to plant?

The Bateman-Wilkinson Co., L't'd 435 Symington Ave. Toronto, Ont.

We also make *Garden Tools* for practical farmers and *Sprayers* of every kind.



FOR SALE BY

J. CLARK & SON - - FREDERICTON, N.B., AND WOODSTOCK, N.B.
THE LOUNSBURY CO. - - - - - - - - - NEWCASTLE, N.B.
BLIGH & PRINCE - - - - - - - - - - - - TRURO, N.S.

HALF THE ILLS OF LIFE

Are Caused By CONSTIPATION.

When the bowels become constipated the stomach gets out of order, the liver does not work properly, and then follows the violent sick headaches, the sourness of the stomach, belching of wind, heartburn, water brash, biliousness, and a general feeling that you do not care to do anything.

Keep your bowels regular by using Milburn's Laxa-Liver Pills. They will clear away all the effete matter which collects in the system and make you think that "life is worth living."

Mr. B. W. Watson, St. John, N.B., writes: "I have been troubled with constipation, for the last three years, and during that time have tried several remedies, all of which failed to help me. A friend recommended Milburn's Laxa-Liver Pills, and after using three or four vials, I felt like a new man. I am now still taking them, and am positively sure that I am on the road to recovery. I strongly recommend Milburn's Laxa-Liver Pills.

Milburn's Laxa-Liver Pills are 25c per vial, 5 vials for $1.00, at all drug stores or dealers, or will be mailed on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Calf Feeding Experiment.

A calf feeding test is reported by the North Dakota Experiment Station in which two lots weer fed, both on whole milk for the first three weeks; then Lot No. 1 was fed 8 lbs. whole milk and 8 lbs. skimmed milk daily, while Lot No. 2 was given 16 lbs. skimmed milk and 1 lb. boiled flax seed. During the first three months Lot. No. 1 made somewhat larger gains and looked a little more thrifty, but during the next three months, Lot. No. 2 caught up. At six months, several experienced dairy cattle breeders pronounced the calves in Lot No. 2 equal to those in Lot 1, in individual merit and dairy development. When the calves were five weeks old they weer also fed clover hay and a grain ration made up of equal parts whole oats and bran. To this was added one-tenth by weight of linseed meal. It cost $19 less per head to feed the skimmilk calves than those fed half whole milk, to the age of six months.

Just a Straight and Simple Story.

MISS BLANCHARD TELLS OF DODD'S KIDNEY PILLS

They Cured Her Kidney Troubles and Other Sufferers Can Learn From Her Experience How They Can Find a Cure.

Paquetville,· Gloucester Co., N.B.—March 7th. (Special.)—Simple and straight to the point is the statement of Miss Justine Blanchard, of this place. She has tried Dodd's Kidney Pills and found them good and she wants everybody to know it. Miss Blanchard says:

"I suffered for a long time with my kidneys. I used Dodd's Kidney Pills and they cured me completely."

One simple statement like that is worth a dozen learned dissertations on Kidney disease. It tells the sufferer from kidney trouble just what he or she wants to know—that a cure can be found in Dodd's Kidney Pills.

For Dodd's Kidney Pills are no cure-all. They are purely and simply a kidney remedy. The reason why they cure Rheumatism, Lumbago, Diabetes, Bright's Disease, Heart Flutterings, Dropsy, Pain in the Back, and other diseases is that all these are either Kidney diseases or are caused by disordered kidneys. Dodd's Kidney Pills cure them by curing the kidneys.

When to Plant Vegetaples.

Temperature and moisture requirements are governing factors in planting vegetable seed. Garden vegetables can be easily divided into two classes, namely: Cool season and warm season crops. There are three groups in the former and two in the latter class.

The first group is composed of short season crops, which cannot endure the heat of summer, but which can be planted in the open ground early enough to develop before hot weather. These comprise garden cress, leaf lettuce, khol-rabi, mustard, peas, radishes spinach and turnips. Additional plantings of lettuce, radishes and peas can be made to secure a succession. Some of these crops can also be grown in the autumn if there is sufficient moisture.

The second group consists of those which cannot endure excessixe heat and which require such a long period of growth that the seed must be started under glass, and the crops transplanted. These are early cabbage, early cauliflower and head lettuce. Late cabbage and cauliflower are started at such a time as to complete their growth during the cool fall months.

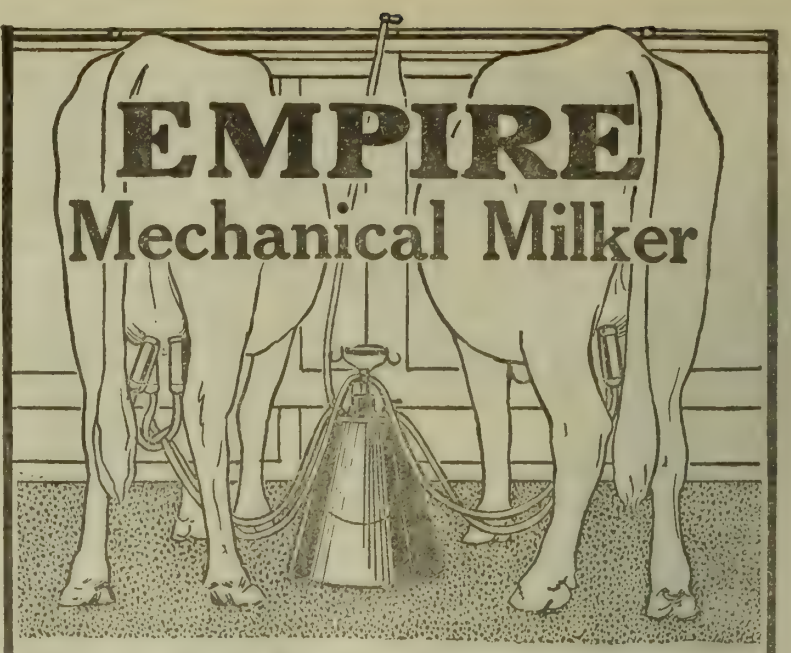
The third group demands cool, moist weather during their early stages, but are capable of enduring considerable heat and drouth after becoming fully established. These include beets, carrots, chard, kale, leeks, onions, parsley, parsnips, early potatoes, salsify, upland cress and New Zealong spinach besides the perennial crops, asparagus and rhubarb.

Help the Young Trees.

Many young trees, through the action of the wind, wave about and wear an opening in the soil at their base, thus admitting water and air to their detriment. One can keep a close watch and straighten up these loosened, swaying trees, filling in around them as neceesary, especially after a strong wind, which usually accompany a rain that has made the ground soft and yielding, but some times this is not done till incalculable damage has been done the trees. The preventatives are preferable to the "cure."

Four stakes are driven firmly in the ground, and soft strings run from stakes to tree trunk, allowing only slight movement of tree. One stake is driven on the north side of tree and one on west side. Stiff sticks are securely tied to stakes and trunk of tree. Sticks must be wrapped with cloth where they come in contact with tree. This also is a fine metho dof straightening up a tree with a crooked trunk, one of the stiff sticks being bound to the trunk at a point considerably higher than the other, and a third stick attached to the stake, lower down on the trunk. The length of these sticks will be determined by the crook of the tree, they being arranged so as to pull it straight. Sticks should be forked, to facilitate fastening to trunk of tree. —M. Coverdell.

Every householder should have ice during the summer months and they could have it if it were provided for during the winter. A little common sense with a little muscle combined with a few tools are the chief requisites. Harvesting the ice crop is a simple operation an drather enjoyable than otherwise, and it yields large returns if its refrigerating effect is properly applied. Ice is so common in January that it seems hardly worth considering, but in July we are ready to pay most any price for it. Therefore, plan to put up some ice in January to use in July. Everybody knows how to pack ice in the old style ice house and this is the way to start. After a little you will want an improved ice storage house with cold storage space in it for handling the more sensitive food products.



EMPIRE Mechanical Milker

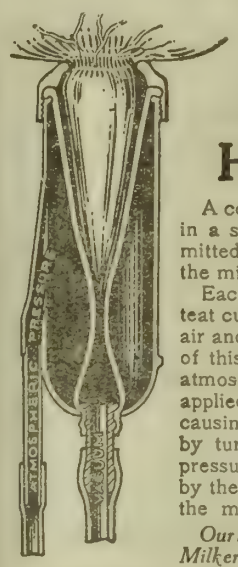
Takes all the Drudgery out of Dairying— Turns Wages Into Profits

Frees you from depending on hired help—
Makes it possible to keep more cows—
Milks them more Regularly and Uniformly—
Coaxes them to Let Down Milk more Freely—
Protects the Milk from Dirt, Germs and Odors

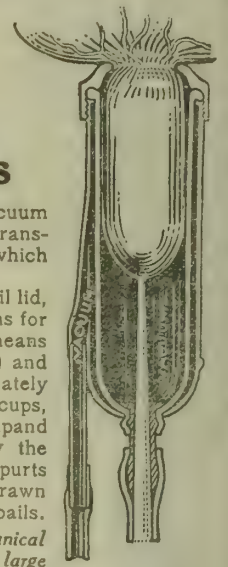
What it Accomplishes

One man with one double or two-cow unit will milk 20 to 30 cows per hour—one man can operate two double units. An Empire Mechanical Milker will quickly pay for itself with even a very few cows. With one or two double units you can handle a good big herd alone, and do it quickly and easily.

The "Empire" so successfully imitates the action of a sucking calf that it is easier on the cows than hand milking, and usually gets more milk. Flowing directly through the tubing from the closed teat cups to closed pails, the milk is always protected from stable air, dirt and germs



Thus, the "Empire" gets more and better milk, saves time and wages, and solves the serious problem of hired help.



How It Works

A compact air pump creates a vacuum in a steel tank. This vacuum is transmitted along the stalls by piping, to which the milking units are connected.

Each unit consists of a pail, a pail lid, teat cups complete with connections for air and milk, and a Pulsator. By means of this Pulsator, vacuum (suction) and atmospheric pressure are alternately applied to the linings of the teat cups, causing them to collapse and expand by turns, massaging the teats by the pressure, then drawing the milk in spurts by the suction. The instant it is drawn the milk flows into the closed pails.

Our literature about the Empire Mechanical Milker is of interest to owners of either large or small dairies. We will send it to you on request without any obligation to you. Just write us saying, "Please send me information about Empire Mechanical Milkers". Address Dept. L 31

THE EMPIRE CREAM SEPARATOR CO.
OF CANADA, LIMITED.
MONTREAL TORONTO WINNIPEG

"The Best Horse Clipping Machine"—

That is what customers in every country say of the

Stewart Ball-Bearing Machine

It turns easiest, clips fastest and endures the longest. Its file hard cut steel gears running in oil will last a lifetime. It has feet of new style, easy running flexible shaft and the new patented Stewart cutting head, highest grade. Clip off the heavy winter coat from your horses before the spring work begins. They will look better, feel better and do better work. Get one of the Stewart Ball-Bearing Machines from your hardware, saddlery or implement merchant, at only $9.25.

Insist on a Stewart Machine, the only one that will give you good service. Write us if your merchant does not have it.

CHICAGO FLEXIBLE SHAFT CO.
609 N. LaSalle St. CHICAGO, ILL.

The cause of decay in Stored Apples

(By J. B. Keil, Ohio Experiment Station.)

Observant fruit growers who have followed the product of their apple trees through the season of storage know that various causes contribute to the decay of stored fruit and that some of the decay is plainly premature, while that appearing after the antural ripening of the fruit is more or less to be expected.

The early decay appearing soon after storing, varying in extent with the natural resistance or susceptibility of the variety, can very largely be traced to injuries which break the skin of the fruit, such as the stem punctures, scratches from sharp corners on crates or picking vessels, or even from the finger nails of pickers or graders, are the starting points for the early decay in storage. The organism responsible for decay in most cases is the blue mold (Pennicilium glancum), spores of which are very numerous, and are present in the atmosphere, readily entering any point of injury. So far as personal observations extend, the fungi comomnly found in connection with decayed apples are unable to find entrance to the fruit when the skin is unbroken.

The change brought on by the ripening of apples—the natural period of maturity of sound fruit—makes the flesh tender, and the skin is more easily injured by handling in such a condition. Also the minor imperfections, such as stings of insects; the feeding or egg-laying punctures of the curculio; leather cracks, and spots affected by apple scab or apple blotch may becomes the points of entrance for spores of the fungi causing decay. Storage scald is very commonly followed by black rot (Spaeropsis malorum) which very quickly destroys the apples so affected. Very late in the season even the stem of the apple may become affected in a mold, especially if the cellar is somewhat moist, and carry the fungus down into the fruit.

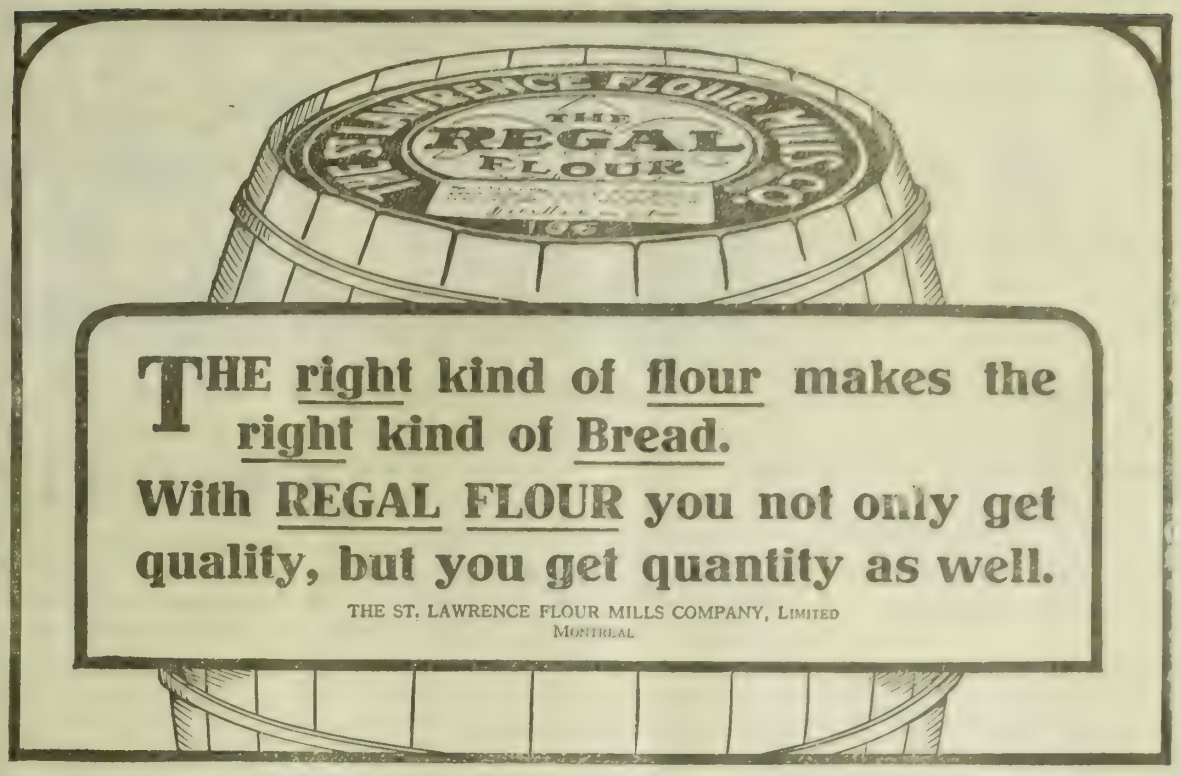
Water core and other forms of internal breakdown are related to the physical condition of the fruit, and favor decay through the softening or breaking down of the tissues.

Against the early or premature decay one factor is prominent; that is, careful handling. The utmost care compatible with profitable operation, to prevent, if possible, all injuries which break the skin of the fruit, is desirable. Over-full picking bags or vessels; unpadded baskets or sorting tables; rough handling of tender-skinned varieties; stacking up of crates filled to above the level of the upper edge; storing in bulk; undue pressure of box lids or barrel heads, and other forms of abuse to which apples are subjected are all to be considered and avoided in every possible way.

Against the decays following maturity, there is also one prominent factor, that is, sound fruit. In storage tests conducted in the station fruit cellar, a sample of perfectly sound Grimes was kept from the time of picking and storing, early in October until March 1st without decay, and with no other change except the natural ripening process and a slight shriveling due to the dryness of the cellar. Comparing this with the average commercial limit in cellar storage of Grimes, it is not difficult to realize that sound fruit properly handled and stored should keep well beyond its natural period of maturity.

In considering these storage problems, one must look upon the influence of temperature as affecting both the ripening process and the development of decay from any cause.

These processes are retarded in direct ratio to the lowering of temperature; but within the range of safety for the fruit, low temperatures are not sufficient to render the organisms of decay inactive. Therefore the importance of careful handling, and of storing only sound fruit in order to secure best results.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REGAL
FLOUR
THE right kind of flour makes the right kind of Bread.
With REGAL FLOUR you not only get quality, but you get quantity as well.
THE ST. LAWRENCE FLOUR MILLS COMPANY, LIMITED
MONTREAL

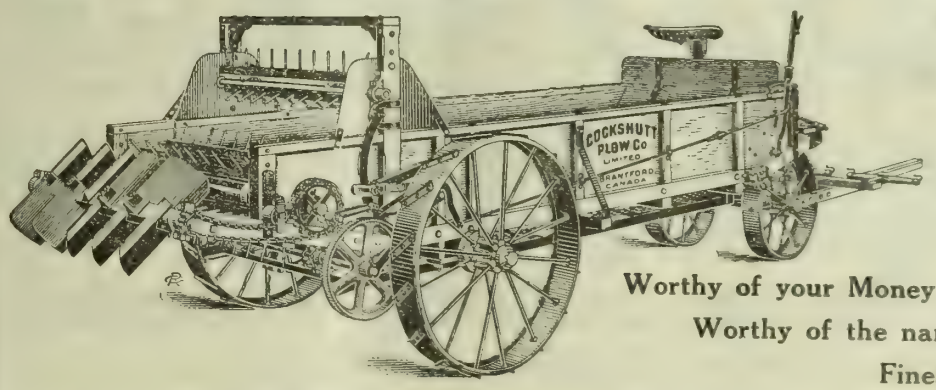
Radishes Free from Maggots.

All the gardening manuals I have read agree in saying that the white maggot which attacks radishes hatches from eggs laid on the leaves or stems of the young radish plants by a fly. If this be so, I thought it might be practical to try shutting this fly out of the radish patch, for if there are no eggs laid on the plant stems there should be no maggots at the roots.

Acting on the idea I put together a light frame 4x16 feet, nailed on 18-inch legs at each of the four corners and covered the whole with mosquito netting. This screen was placed over the radish bed within 48 hours after sowing the radish seed and kept in place until the radishes were all grown and pulled. It worked fine—not a maggot scarred radish in the entire bed.

The netting is held down to the ground by placing a loose board on the edge, and when any radishes are wanted this is lifted off, the netting raised without moving the frame or leaving any opening for the fly to sneak in. I have followed this plan with gratifying success for several years, while some of my garden-making neighbors, who had given up trying to grow early radishes because of this maggot pest, have adopted it and are having good success. It is inexpensive and practical for the hemo gardener.—L. G. Brown.

Here's a REAL MANURE SPREADER



Manure is worth $27, in hard cash, per animal, per year—if you use it right. Can you afford to throw this money away?

It's easy to make a machine that merely "dumps." The Cockshutt "spreads."

Worthy of your Money.

Worthy of the name of Cockshutt.

Finest kind of investment.

BECAUSE we know how necessary good fertilizing is, because we know from investigation how many thousands of dollars are wasted through hap-hazard methods of manure spreading, we have never been satisfied until our experts turned out a Spreader that we could put the Cockshutt name on and sell to you as a real, perfect Spreader. Here it is—the picture above does it very scanty justice. Learn more about it.

There is all the difference in the world between having a load of manure pitch-forked in lumps and chunks onto the ground and having it pulverized and spread over the field, like a blanket. The first way means waste—waste of time, work, fertilizer and crop. The second way is the Cockshutt way.

The Cockshutt Manure Spreader has chain drive—the strongest made. All levers are easy to work and right at driver's hand. Has the famous Cockshutt light-draft, yet it will give a life-time of hard work over rough or frozen ground. Bottom of box is stationary, no clogging or breaking of slats or rollers. The emptying gear—heavy steel angles held together by endless chains—is simple yet positive and cannot get out of order.

Extra to the usual spike-studded distributing cylinders at box end, the Cockshutt has a special Distributor which breaks up even hard lumps and gives a wide distribution as well as perfect pulverizing of the manure.

Box is low, only 41 inches from ground, yet with 17 inches clearance underneath. Makes the heavy work of loading easy.

Here is an implement that will very soon pay for itself on any Farm. Write to-day to our nearest branch or head office for illustrated folder on the Cockshutt Manure Spreader.

THE FROST & WOOD CO., Limited,

MONTREAL. SMITH'S FALLS, ONT. ST. JOHN.

Shipping Potatoes in Cold Weather.

(Continued from Page 345).

are as desirous that the potatoes should reach their destination in good condition as the shipper. When cars are loaded as above explained they are practically frost proof for several days providing, however, that the temperature of the potatoes when loaded is considerably above the freezing point. It could not be expected that potatoes which are taken out of a cellar at a temperature of say 35°, would stand much frost in transit as compared with those that are taken out at a temperature of 50° or 60°. This point should be clearly understood. The initial temperature of the potatoes themselves is very important to their safe carriage in cold weather as it is the stored heat in the potatoes that gives the frost-proof qualities to the protection of straw, shavings and paper.—Madison Cooper.

The Making of Sauerkraut.

Select hard, well-developed cabbage heads. Remove the outer leaves, leaving only the crisp, white portion, then with a knife or special instrument made for the purpose, remove the core of the cabbage. Cut the cabbage on a kraut-cutter, which can usually be obtained at a hardware store at a nominal price. These cutters vary in size from one to six-inch knife blades, a little box fitting into the groove of the frame holding the knives in such a way as to premit the box to move back and forth over the cutting edges. The prepared cabbage heads are placed in this box and are thus sliced with the knives below.

The knife or cutter is generally placed on top of the vessel containing the kraut. A crock or stone jar holding from five to fifteen gallons is the best receptacle to use, on account of its cleanliness, and for family use. Proceed to fill the vessel or jar as follows:

Sprinkle a thin layer or salft in the bottom of the vessel, then place two inches of kraut on top, then sprinkle this layer with salt sufficiently to show the salt on the kraut. Proceed in this manner until the vessel is full. At intervals, pack the kraut down firmly in the vessel. For a ten-gallon container, use a pound to a pound an da half of salt. After the vessel is filled and packed down firmly, take a clean piece of board that will fit inside of the receptacle and place this on top of the kraut and weight it down with some clean stones, or anything that will keep the kraut under pressure.

In a few hours, the water from the kraut will rise to the top and above the kraut. It should be left in this condition until ready for use.

It requires from four to six weeks before the kraut is ready to be utilized.

The receptacle containing the kraut should be kept in a cool, shady place.

On a commercial scale, the kraut is generally packed in barrels, and the makers pay little or no attention to the amount of salt used, as it becomes a habit with them in sprinkling a layer of salt over a layer of kraut.

The packing of the kraut is very important. Only sound cabbages should be used.

A Future Promlem.

The Maritime Merchant thinks that the next big problem after the war and the settlement of the land will be that of a national system of roads. We have pretty nearly completed what railway construction is necessary in Canada. We may have to build occasional spurs and short branch lines, as local needs arise, but we have certainly equipped ourselves very fully in the matter of main lines. And think of the many millions and millions of dollars we have spent in providing all this equipment. But while we have been doing this, says the Merchant, we have apparently thought our public highway system of secondary importance. At least we have acted as if we have considered it in that light. The importance of a good system of public roads, however, is quite on a par with the importance of a complete railway system. In fact, both are co-ordinate parts of our transportation system and the neglect of our roads simply impairs, to the extent we neglect them, the efficiency of our railways. We fall short of the success our railways ought to give us to the extent that we neglect our roads.

Perhaps our various governments will turn their attention more seriously to this problem. Now that we have completed our railway system, it seems logical that we should turn our attention earnestly to the common roads which are as it were the hands of the railway reaching out to gather up traffic. Much national upbuilding has accompanied our railway building; who can measure the amount of it? A similar and possibly a greater measure of upbuilding would follow the making of suitable roads. And how much smaller an undertaking it would be to solve our road problems. May we not turn to them with as good courage as we once turned to our railway problems?

Out of 71 counties in Wisconsin there are 50 that have local organizations for the development of the pure seed growing industry.

AN IDEAL TONIC

When your head is dull and heavy, your tongue furred, and you feel done-up and good for nothing, without knowing what is really the matter with you, probably all that is needed to restore you to health and vigour is a few doses of a reliable digestive tonic and stomachic remedy such as Mother Seigel's Syrup. Take it after each meal for a few days and note how beneficial is its action upon the stomach, liver and bowels—how it restores tone and healthy activity to these important organs, and by so doing enables you to gain new stores of vigour, vitality and health.

FOR THE STOMACH AND LIVER

MOTHER SEIGEL'S SYRUP

The new 1.00 size contains *three times as much* as the trial size sold at 50c per bottle.

5015

FREE--FREE--FREE

Two Weeks' Course in Agriculture

AT THE

Agricultural School, Woodstock, N.B.

MARCH 20th to APRIL 1st, 1916

The First Week will be devoted to Fertilizers, Soil Management, Insect Pests, Plant Diseases and Spraying.

The Second Week will be devoted to all classes of Live Stock and Field Crops.

The only expense to you will be Board while in Woodstock and Railway Fare at Reduced Rates. Purchase a Single First-class Ticket to Woodstock and get a Standard Certificate from the Ticket Agent.

A list of suitable Boarding Houses will be provided to Students.

Applications for enrolment in this course will be received up to March 18th, but should be sent in as early as possible. Send applications and inquiries for further information and full program to A. G. TURNEY, Fredericton, N. B.

NEW BRUNSWICK DEPARTMENT OF AGRICULTURE,
HON. J. A. MURRAY, Minister.

Humus.

The old time gardener seldom made up a potting compost without the addition of leaf mold, he had been taught by generations of experience, it was a valuable substance to add to his potting soil. While he may have been ignorant of its chemical effects, he knew the physical effects of keeping the soil open by keeping the particles of sand an dclay asunder, thus improving its aeration and porosity.

Experience also tauught him that it is "hungry stuff" and that with the exception of some plants, such as ferns; few plants would do their best in it.

Among the laymen, the common error was and is still prevalent that humus or leaf soil is rich in plant foods, but the practitioner knows better. It does, however, perform important functions in the soil in addition to the physical ones of keeping it open, retaining heat, and holding moisture.

The decaying leaves are a medium for the existence of certain fungi which are very beneficial to the growth of certain plants, notably the Heaths, Conifers, Beeches, Chestnuts, etc. The fungal threads or filaments can readily be seen investing the roots of these plants, and are only present when they are in good healthy condition. It has been suggested that the true cause of the Chestnut blight is really due to the loss of humus and the attendant beneficial fungi. When one stops to consider now from what they were when the chestnut forests were in their prime, the suggestion does not appear so unreasonable, perhaps in time the scientists will prove it to be actually the case that the blight could never have made headway, if the humus could have been conserved.

The forest fire, and the baring of the whole country of growth not immediately useful to man, has undoubtedly upset the balance of nature, results of which are sure to be far reaching and not altoegther to our profit.—The National Nurseryman.

Fall Plowing and Frost

While the effects of the frost are evident in early spring, the heavy soils may require an entire winter's exopsure to the cold. To plow the land in the fall and leave it in the rough condition during the winter may entail the loss of soluble plant food, but the management of a farm depends largely upon the texture of the soil and the crops grown thereon. Lime gives best results when applied in the fall and it is an old maxim of farmers that all soils are benefited by lime and frost. No matter what the substance may be, should a few molecules of water effect an entrance between any of its particles disintegration to a certain extent will be the consequence. Hence as the frost is a friend to the farmer, he should endeavor to utilize its power as much as possible. He should leave the soil loose in the fall for the frost to enter, or he should endeavor to plow early in the spring in order to secure the benefits from later frosts. When fall and spring plowing is done the cutworms and other insects are brought to the surface and exposed, which destroys many of them. The frost is nature's greatest pulverizer and it works quietly and surely. It's advantages may not be apparent, but without its aid the long winters would soon render the earth so close and compact as to render cultivation impossible, but a wise Providence allows wtaer to expand with both heat and cold, thereby performing for mankind that which could not otherwise result.

Nerve Collapse

The Remedy

Rx Powerful Nutrients, Hypophosphites, Nerve Restoratives, Valuable Stomachics.

Prostration and Vital Exhaustion are Cured by Dr. Cassell's Tablets.

It is because Dr. Cassell's Tablets overcome vital exhaustion that they are so sure a remedy for nerve breakdown, brain fag, and all run-down conditions. They contain valuable nerve nutrients and body builders, which by strengthening the nerves and enriching the blood restore vital power to the whole system, and so build up new strength and physical vigour.

Sir John Campbell, Bart., C.B., formerly Major-General in the Royal Artillery, derived so much benefit from taking Dr. Cassell's Tablets that he wrote to the proprietors in praise of the remedy. He said "I have pleasure in stating that I have derived great benefit from Dr. Cassell's Tablets, and have found them remarkably effective in restoring the nerve energy and physical vigour which advancing years naturally impair. They suit me admirably and I have every confidence in recommending them as a safe and reliable bodily restorative." The experience of this great soldier is the experience of uncounted thousands in all parts of the world. They are the surest of all restoratives, and equally suitable for old or young. A British remedy from first to last.

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised modern home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five. War Tax Extra, 2 cents per tube.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

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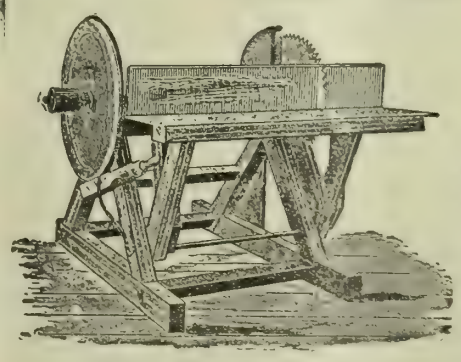

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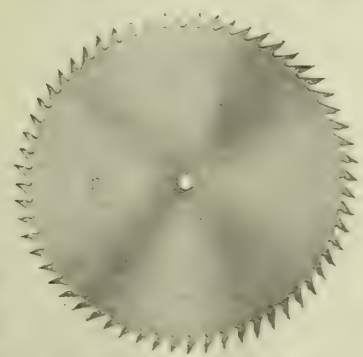

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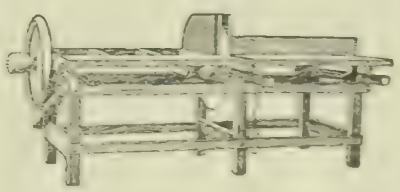

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Ask for our Catalogue and Prices, it will pay you.

Remember we also manufacture Trenholm Gear Hay Presses, Grain Grinders, Root Pulpers, Feed Boilers, etc.

The Sussex Manufacturing Company, Limited, Sussex, N. B.

Growing Crops Without Potash in 1916

And Pharoah commanded the same day the taskmasters of the people and their officers saying: Ye shall no more give the people straw to make bricks as heretofore, let them go and gather straw for themselves, the tale of the bricks which they did make heretofore ye shall lay upon them, yea shall not diminish aught thereof, and the taskmasters of the people went out and their officers and they spoke to the people saying, thus saith Pharoah, and will not give you straw; go ye get straw where ye can find it, yet not aught of your work shall be diminished; then the officers of the children of Israel came and cried unto Pharoah saying: Wherefore dealest thou thus with they servants, there is no straw given unto thy servants and they say to us, make bricks, and behold thy servants are beaten. He said: Ye are idle, go therefore now and work for there shall no straw be given you ye shall deliver the tale of bricks.

Bricks without straw; crops without potash. For more than a generation Nova Scotia agriculture has been depending on the purchase of plant food in commercial fertilizer. It has been a matter of great concern to many farmers engaged in agriculture that it has not been self sustaining and that it has been necessary to look outside of its borders for the needed extra plant food. Examination of statistics indicate that the introduction of commercial plant food to Nova Scotia agriculture has steadily advanced, not only in the total yield but in the net profit per acre, there are very few present who remember when potash was made an essential part of commercial fertilizer. This occurred in the seventies up to that time the fertilizers mostly used was guano and dissolved bone, black, these carried nitrogen and phosphoric acid, but no potash. Many experiments have been made and many treatises have been written showing the value of potash in agriculture. The experimental data showing how crops can be grown without potash are few. The papers which I present here today is based on experiments conducted by some of the farmers of Lunenburg County and the Maine Agricultural Experimental Station. The past season a series of experiments was conducted to determine the effects of different amounts of potash. The plots without potash gave 302 bushels of potatoes per acre; plots with 2 to 5 present potash gave practically the same yield of 320 bushels per acre; there was a slight increase on the 8 per cent potash over the former plots, a yield of 3.30 bushels, a balance of 28 bushels per acre over the plots with no potash at all. It must be granted that the above tests are not final. The above is considered a big yield for an off year, much above the average for Nova Scotia.

Albert Veinot, of West Northfield, Lunenburg county, veteran potato grower, conducted an experiment the past summer on potatoes. Mr. Veinot had some potash held over from the previous year. He bought some acid phosphate and nitrate of soda to mix up a 4.8.10 mixture, sowing 8 ct. broadcast and 8 ct. in the drill on one acre, did not have enough for the other acre. He bought a 4.8.4 mixture, the best available last season. He applied the 4.8.4 same as the former acre; the 2 acres were treated alike. Mr. Fuller, the judge on field crop competition judged the above field in September, and said that the acre with a 4.8.10 had nothing on the field with a 4.8.4. At the time of digging the 4.8.4 was as good as the 4.8.10. Some farmers in the county grew as high as 75 bushels of oats per acre on a 4.8.10 mixture, the soils in question were mostly of a clay loam. Nitrate of soda is higher this year than in former years. Many reasons account for this. Nitrate is used for making explosives. Tonnage is high, and there is a slide in the Panama Canal, which makes a long trip around the Horn. It is hoped that the slide will soon be removed. It is hoped that soda will be cheaper by spring and phosphate is also higher on account of sulphuric acid being used in the manufacture of high explosives.

Most of the fertilizers for next season's use are in the various storehouses and the potash in these goods is not above 1 per cent. For this 1 per cent the farmer will have to pay $5.00 in the wholesale fertilizer trade. Raw materials are bought and sold on the unit system. The unit is 1 per cent or 20 lbs. per ton. The prices on fertilizer was set in October by the fertilizer combine. The question is: will it pay us as farmers to buy this fertilizer with one per cent of potash, and pay $5.00 for the same, or will we buy plant food straight or what the market has to offer plus the potash. What we will have to do is to work the soil more next season than we ever did in the past, so as to make the plant food available, the result will be crops without potash. It is my wish to have this potash question debated at all farmers' meetings.

WALLACE RHODENIZER.

The Blackberry may be Grown by Everybody.

(Continued from Page 347.)

ry fruits but once on the same canes, and new canes annually replace the old ones which die during fall and winter. A handy instrument to cut and pull out these old canes is a hooked blade on the end of a three-foot wooden handle, which a smith can form from an old hoe blade.

The next work is to plow and cultivate the middles and continue this until fruit is picked, unless there is a mulch thick enough to smother weed growth. Early in the spring the shoots of the new canes will be seen coming up from the collar of the vine as well as in the form of suckers from the roots. As soon as these new canes reach a height of from two to three feet, their tip or terminal bud should be pinched off to check upward growth and cause side limbs or laterals to start out. This process makes a strong, stocky bush which will stand erect under its load of berries. As the new canes do not all appear at once, the rows must be gone over every few days in order that all canes may be pinched at proper height. In addition to cultivation, the rows must be kept clear of weeds and grass with the hoe.

As the new shoots appear, the indications of rust must be looked for. It will be detected in the peculiar crimping of the top leaves and a little later it will break out on the lower side of the leaves, gradually changing in color, as it ripens to a deep red. This means that its spores are ripe and ready to float about and infect other plants. Every effort should be made to prevent the ripening of the rust spores. There is no remedy known for this disease, and as soon as infection is discovered, the whole vine should be grubbed out with its roots and burned. Rust signs should be carefully looked for every four or five days. When the fruit begins to turn, pickers should be engaged. Boys generally apply for this work and will do well if under the eye of an overseer. They are paid 1½ to 2 cents per quart box. They will pick much faster if given tin buckets to suspend from their waists and these buckets, when full, are poured into boxes and crated for market. The pickers are given tickets, calling for so many boxes, and these are redeemed every Saturday. The greatest difficulty with boys is in getting them to pick clean.

There is an excellent general demand for the blackberry. Every housekeeper wants it to can or to make jam, jelly or preserves. The workingman loves the fresh fruit in pies.

It is a well-recognized fact, though one too often overlooked in selecting sites for orchards, that cold air settles to the lower levels. For this reason it is often colder at the lower elevations than it is at higher points in the same locality. This is what is meant by "atmospheric drainage." The occurrence of frost in low places when there is there is none on elevated areas is thus explaind. For th same reason peach buds are often winterkilled or the blossoms are injured by frost in the spring in low places when nearby orchards on higher elevations are included much less, or even escape entirely.

loss in fruit over 80 per cent, as shown by Government tests in 19 different orchards. Used on potatoes, a SPRAMOTOR has increased a yield of almost nothing to 400 bushels an acre.

You Have Many Uses For This Machine !

We are frank in telling you that a SPRAMOTOR, rightly used, will earn its cost the first season and pay you a handsome profit besides.

Our SPRAMOTOR is a very adaptable machine—one that will benefit you in many ways. It saves orchard trees and row crops with equal certainty, destroys weeds, kills rot, blight, canker, lice, beetles and all parasites.

It throws paint or whitewash on to buildings twenty times as quickly as by hand, and does a better job. Used with disinfectant, it protects horses and cattle from biting, tormenting flies and lice. It reduces the percentage of

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Doctor Said Only Hope Was in an Operation

Was Skeptical When He Began the Use of Dr. Chase's Ointment—Relief Came Quickly.

Here is a plain, honest statement in regard to Dr. Chase's Ointment. Between the lines of this letter you can read the gratitude which its writer feels. One does not suffer from annoying, distressing piles for ten years without appreciating a cure when it is obtained.

Almost every mail brings the report of someone who has been cured of piles by the use of Dr. Chase's Ointment. Such statements are never used without the permission of the writer, and until we are satisfied that the cure is genuine and the writer a person of responsibility.

You may believe in operations for piles, and think there is no other cure. Write to Mr. Ingles, enclosing stamp, and he will gladly verify his statement. He will tell you that the pain, the expense, the risk of an operation are quite unnecessary. That relief and cure come with the use of Dr. Chase's Ointment.

Mr. Ernest W. Ingles, Penticton, B. C., writes: "I suffered from piles for ten years, and though I tried all kinds of ointments and injections I really had no permanent relief until I used Dr. Chase's Ointment. When I began this treatment I had absolutely no faith in it, for I had been examined by a well-known physician in Vancouver, and he said that an operation was the only thing that would benefit me. It was surprising the relief I obtained from the very first box, and now after using four boxes I am practically cured. My case was so exceptionally bad that I received no relief day or night, and for this reason the results are wonderful."

You can obtain Dr. Chase's Ointment from any dealer at 60 cents a box. If you do not want to risk this much send a two-cent stamp to pay postage, and mention this paper, and we shall send you a sample box frec. We are so certain that any sufferer from piles will obtain relief by using this ointment that we do not hesitate to make your this offer. Edmanson, Bates & Co., Limited, Toronto.

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have already stood over 30 years. They make your building safe from fire. Easily laid yet no storm can lift them, no sleet or rain can drive underneath. Fit snug and tight in the valleys. "Eastlake" heavily galvanized shingles are the original and best; their patented features can never be equalled. Get our prices.

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is always uniform in gauge and size, therefore it is easily and quickly laid by even inexperienced labor. Has deep, snug-fitting corrugations and makes a strong, rigid fireproof wall that needs no paint or repairs. All "Metallic" goods are heavily galvanized. Our prices will interest you.

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Are famous for beauty, sharp embossing, ease in laying and durability. They banish the wall-paper problem and free you from cracked plaster and peeling wall-paper. Quite inexpensive. Make a beautiful, sanitary, easily cleaned, fire-proof covering, that is readily nailed on over any surface. Splendid for Sunday schools, halls, etc.

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Feeding Newly Hatched Chicks.

The first feed should consist of two parts bran to one of rolled oats, which is fed in shallow tin pans, in the bottom of which is sprinkled some chick grit. The chicks are allowed to pick at this for about 10 minutes and then it is removed.

For the first few days they are fed five times a day—very sparingly as above. During the first week the mash is gradually changed until it contains equal parts of bran and rolled oats.

Another good feed to start the chicks on consists of rolled oats and hard-boiled eggs. The eggs used are the sterile ones taken out of the incubator at the first test. These are boiled hard, then ground or chopped fine, and mixed with the rolled oats in the proportion of about six parts rolled oats to one of chopped eggs. This be fed sparingly and freqeutnly as directed for the first mentioned feed.

On the second day a little fine cracked chick grain is sprinkled into the litter for them to scratch for. There are several chick grain mixtures sold on the market that are very satisfactory, and that are valuable to persons raising btu few chickens. The grain ration given here is home mixed and is made up as follows:

Fine cracked wheat, 15 parts by weight; pinhead oats or granulated corn meal, 10; fine screened cracked corn, 15: fine cracked peas, 3; broken rice, 2; chick grit, 5; fine charcoal, 2.

This grain mixture should be fed during the first three weeks, then gradually changed during the fourth week so that at the end of the week it will contain: Cracked corn, 4 parts by weight; cracked wheat, 2; pinhead oats, . The garins are cracked somewhat coarser than for the chick feed. This grain mixture is fed for the remainder of the summer.

During the second week the mash should cotnain a little corn meal, which is gradually increased, and later animal meal and Daisy of low grade flour are added, so that at the end of the second week it contains; Bran, 1 part by weight; corn meal or barley meal, 1½; rolled oats, 1; Daisy flour, ½; fine beef scrap ½. The chicks should b fed this about four times a day.

During the third week this mash is gradually changed by dropping out the rolled oats and adding gluten meal, and increasing tne other ingredients until it contains: Bran, 2 parts; corn meal or barley meal, 3; gluten, 1; Daisy or low grade flour, 1; beef scrap, 1. It is kept in a hopper before them at all times.—William F. Schoppe, Montana.

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Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

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Dark Cornish Pairs, $2.00; trios, $3.00. S. C Buff Leghorn Cockerel or Silver Campine Cockerel, $1.50 each. Utility S. C. Red Cock, $1 50. Utility R. C. Red Cock, $1.50. 1st Amherst Cock, R. C. Red, $15. 3rd Amherst Cock, R. C. Red, $10.00, also one yearling R. C. Red Cock, $5.00 Have no young stock for sale. Will buy a few dozen hens, any breed.

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Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

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FOR SALE.—One pure bred registered Guernsey Bull, now 23 months old. This Bull is a first class individual and unites the best strains of the Corning and Roper herds. Well suited for an agricultural society or private herd. Price reasonable.—W. E. READ, Bear River, N. S.

WANTED.—Man for general farm work, a good milker and one used to an axe. Must be clean, respectable and a good worker. Steady employment. Good home and food. Wages from twenty to thirty dollars per month, according to ability.—CHAS. R. PETERS, Elmhurst, Kings Co., N. B.

FOR SALE.—Now booking a few orders for Spring in the following eggs: Ring Necked Pheasants at $3 00 per doz.; Golden Pheasants at $7.00 per doz.; Lady Amheret Pheasants at $12.00 per doz; White Pekin Ducks at $3.00 per doz.; Colored Muskovey Ducks at $4.00 per doz.; Black Cayuga Ducks at $.400 per doz.; Wild Mallards at $4.00 per doz.; Wild Black Ducks at $4 00 per doz.; African Geese at $6.00 per doz.—JOHN T. GOODFFLLOW, Chateauguay Que.

FOR SALE—My purebred Clydesdale Stallion Scotty Baldwin No 9291 Canadian National Records bred by C. Baldwin Hilkburg Ont foaled May 14 1908 weight 1650 lbs dappled brown color 4 white legs from knee down white stripe in face very neat and Stylish Action perfect disposition well broke to drive or work single and double sure foal getter parents both imported apply to J. C. STEVENS Hopewell Hill, N. B.

FREE, to stockmen and poultrymen our 80 page illustrated booklet on feeding; how to construct a house which will accomodate 100 hens; gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry foods and remedies.—THE W. A. JENKINS MFG CO., London, Canada.

Fall Clearing Out Sale

First prize Registered Holstein Bull over two years old, $100.

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1,25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

Dispersion Sale
March 15th

Owing to the Managing Director of this farm having gone to the front, it is found necessary to reduce our large stock.

On March 15th we will sell at Private Sale or Auction a number of Fine Holsteins and Ayrshires, all ages, male aud female.

Send for catalogue.

ROBERT KIDNEY, Manager.

CLOVER NOOK STOCK FARM,
Hartland. N. B.

Percheron Stallion
GLENEUR
FOR SALE !

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

Wm. Jamieson, - - Sussex Corner, N. B.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls. 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.

PEN NO. 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm,"
Oxford Junct., N.S.

WEDDING STATIONARY.

We furnish correct invitations and announcements, with double envelopes.

Price: 50 for ..... $ 2.50
100 for 3.50

We prepay charges.

Engraved Invitations, $11.00 per hundred.

Engraved Cards, $1.00 per hundred. Plate, $1.00.

One hundred Calling Cards, Printed, 65 cents.

THE MARITIME PUB. CO., LTD.
SUSSEX. N. B.

Butter Parchment

At Farmer Office, Sussex

A BARGAIN.

Four turkey eggs, (Bronze) six Buttercups and five Single Comb Rhode Island Red eggs $2.00. Rhode Island Reds, Buttercups, $1.50 sitting 15 eggs. Best Buttercups eggs, birds good enough to exhibit, $2.00. Grey African Geese eggs 50c each. Blue Orpingtons from the bes English stock, I have one pullet in my flock from Crystle Palace, England, winner, and other birds from Boston and New York winners $5.00 for 15. Bronze turkey eggs $3.00 a dozen.

SARAH E. MOSES SMITH, - Woodward's Cove, N. B.

Buff Orpington Eggs for Hatching !

Exhibition stock, $3.00 for 15; Utility stock, $2.00 for 15.

Some fine young Guernsey Bulls for sale.

Highland View Dairy, R. R. Black, Amherst, N. S.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

Elmhurst Stock Farm !

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Helfer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Winners at Amherst, Moncton, St. Stephen and Fredericton

Seaman's Rose Comb Rhode Island Reds

Send for Mating List.

Geo. H. Seaman, Box 325, Moncton, - N. B.

Butter Parchment at Farmer Office, Sussex

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding **The Farmers Most Profitable Cow** should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell View Farm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires !

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Strawberries and Raspberries

Strawberries:--Senator Dunlap, Warfield, Pokomoke, Three W's, Parson's Beauty, Glen Mary & Sample.

Raspberries:--Herbert, King, Cuthbert, Eaton & Hiram.

Also Eggs for Hatching.

Barred Plymouth Rocks, White Wyandottes and White Leghorns Best bred to lay Strains. Send for Price List.

For Sale:--One White Wyandotte Cockerel [a beauty] $2.00 Orchard Hill Farm, Browns Flats, N. B.

BARRED PLYMOUTH ROCKS

What's the use of paying big prices for Eggs for hatching when you can get the BEST LAYING STRAIN of Barred Rock Eggs, for $1.00 per setting. Parks Rocks have been bred for Egg production for over 25 years. A few Hens, Pullets and Cockerels for sale.

J. H. PRICHARD, - - SUMMERSIDE, P. E. I.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices.

Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - Clifton, N. S.

HIGH-RECORD HOLSTEINS

Having bought a farm at this address and removed my Holstein herd from Rockview Farm, "Welsford", I am prepared to supply a few choice young Bulls. I have also a few choice Yorkshire pigs, both sexes, about four months old.

WM. S. HARDING, - Hammond RIVER, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

Poultrymen Attention !

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.
Send for free Catalogue and give us a trial order

FARMS FOR SALE

Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

Genuine Clearing Sale of

Standard Bred Poultry

Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

FOR SALE

5 trios S. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5.00 per trio. 2 trios R. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5.00 per trio. Also 1 pure bred Shorthorn Bull Calf, 5 months old.

Write for particulars to

W. H. Henry, - Shubenacadie, N. S.

WYANDOTTES

GOLDEN AND SILVER

Splendid exhibition Cockerels and Pullets—a large number—in both varieties for sale at right prices. Send for one or more of the kind that can win at The Maritime Winter Fair next month

EVANS KYLE
Magnolia Avenue Poultry Yards
SUSSEX, N.B.

SEED OATS!

Prince Edward Island Banner Oats, grown from registered seed. Write for samples and prices.

HOWARD & SCOTT,
Cornwall, P. E. I.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

ONE CENT A WORD

FOR SALE:—Handsome Pigeons 25cts. per pair, or 5 prs. $1.00 J. C. ROBERTS, Shediac N. B.

FOR SALE:—Pure bred white Orppingtons & Buff Cochen eggs for Hatching write for prices. F. V. BISHOP, Kilburn N. B.

FOR SALE:—Three Ayshire bulls fit for service Calves both sex all ages. Booking orders for Yorkshire pigs. JOHN A. HUGHES, Petitcodiac, N. B.

SENATOR DUNLAP STRAWBERRY PLANTS:—Booking orders now for this variety which has given general satisfaction in almost all sections and all kinds of soil, prices on application. RUFUS S. NEWCOMBE, Brooklyn Corner N. S.

FOR SALE:—Two second hand brooder stoves at half price, also two International hovers only been inuse two months. Each capable of brooding from 50 to 100 chicks. Apply to MRS. GUY KINNEAR, Sussex, N. B.

GET YOUR NEW SUIT:—From Catesbys, London, England, for half what you pay local tailor. Best materials, style, fit guaranteed, or money back. Write for free Catalogue, self measurement form and patterns. Address CATESBYS LIMITED, CANADIAN OFFICE, 191 WELLINGTON ST. WEST. TORONTO. MENTION—Maritime Farmer.

"WANTED:—An experienced farmer capable of assuming the responsibility for taking full control of the farm owned by the Brunswick Hotel near Moncton. This consists of 40 acres of hay land and 60 of mixed farming. Salary and liberal share of profits. Address reply, J. L. McSWEENEY, P O. BOX 1217, New York, until March 10th, then MRS. GEORGE McSWEENEY, Hotel Brunswick, Moncton."

WANTED:—Manager to take charge of farm Experience in dairy farming desirable good knowledge of farm machinery requisite oil engine, threshers, &c. must be good ploughman reaper &c as well as capable of planning work tactful in handling men. Wages with board to single man start at $30 per month. Cottage with garden and chicken house at low rent for married man, wages from $10 per week apply L. O. care of Maritime Farmer.

SMALL ORCHARD FOR SALE:—On Avon River, Hantsport, Nova Scotia. Seven Acres with 60 apple trees, plums, cherries, pears, currants, raspberries, gooseberries, etc Good house four rooms down stairs, four up stairs Hot and cold water in house. Excellent summer bathing. Splendid opportunity for market gardner. Only ten minutes to churches and station. Owner's reason for selling, ill health. For further particulars, apply to W. H. SWEET, Hantsport, N. S.

Pedigreed Nursery Stock.

The recent work of the bureau of plant industry has shown some very interesting results from the practice of bud selection. This work has shown conclusively that pedigreed nursery stock is just as important in raising productive fruit trees as pedigreed calves in raising a high grade of cattle. They attach even more importance to bud selection in tree production than to seed selection in corn and cotton. Their experience, covering several years, has shown the old practice of taking buds from young trees to be unwise. In this manner a great many worthless trees are produced. Bud wood should be chosen only from old, bearing trees on which a close record has been kept for a number of years. These trees, in addition to being good bearers should conform to your standard type. Nor is it enough to select your bud wood from a productive or desirable tree; it should also be chosen from a limb which is productive and which has strong, healthy buds.—Fred W. Davis, Texas Commissioner of Agriculture.

Two Greeks in California have started a sheep-cheese factory—the first to be operated in America. They will operate a plant consisting of 175 acres in alfalfa, 100 acres of dry feed, 1250 selected ewes whose lambs will be marketed at three months and the ewes then milked for four months

SEED OATS

Insure a bigger crop this season by sowing "H. & S." specially grown Banner Seed Oats. Put up in 3 bushel stamped bag. Write for samples and prices. If you can handle carload of produce, write or wire for quotation.

HOWARD & SCOTT, Cornwall, P.E.I.

FREE--Handsome Mating List.

Rhode Island Reds, Black Minorcas, Red Sussex, Speckled Sussex, Buff Orpingtons, Spangled Hamburgs.

SEAMAN AND STEWART
Box 325 Moncton, N.B.

Bordering Beautiful Lake 58 Acres $1600

Level tillage land free from stones. Fruit and berries. Attractive 8-rm house, 40-ft. barn clapboarded both painted and in good repair. Maple shade pleasant view, Owner wants larger farm and his price is only $1600 It is your chance to pick up a lake farm at a low price. See page 13 "Strouts's Latest Bargains" copy free. E. A. STROUT Farm Agency, Dept. 2612, 294 Washington St., Boston, Mass.

FOR SALE:—500 Bushels Banner Oats, Improved seed. FISKE BROS., Florenceville, N. B.

EGGS FROM PRIZE WINNING:—Bred to lay Barred Plymouth Rocks, Single Comb white Leghorn, Golden Wyandottes $1.50 per 15. Won 9 first 9 seconds on 20 entries. F. E. GARBER, Bridgewater, N.S.

BRUCE'S SEEDS

3 Grand Varieties--Good as Gold

Beans —Refuge Wax—Pods round, clear and transparent and of handsome appearance. Is tender, very productive, free from rust, and stands dry weather well. ¼ lb. 15c., 1 lb. 45c., 5 lbs. $2.00. Postpaid.

Corn —Golden Bantam—An early, hardy, productive variety, of finest quality and delicious flavor. It is a rich, cream yellow, deepening to orange-yellow when ripe. ¼ lb. 10c., 1 lb. 30c., 5 lbs. $1.40. Postpaid.

Peas —Bruce's Early Settler—A grand extra early wrinkled marrow variety. The pods are large, deep green, and filled with large peas, possessing the rich flavor and quality of the best late varieties. It attains a height of about 1½ feet and is very productive. ¼ lb. 15c., 1 lb. 40c., 5 lbs. $1.75. Postpaid.

If sent by Express at purchaser's expense, deduct 10c. per pound.
BRUCE'S Seeds are the cheapest, because they are the best.

FREE Our handsomely illustrated 128-page catalogue of Vegetable, Farm and Flower Seeds, Plants, Bulbs, Poultry Supplies, Garden Implements, etc., for 1916. Send for it.

John A. Bruce & Co., Ltd., Hamilton, Ontario
Established Sixty-six Years.

ATTENTION!

Mr. Trapper and Fur Shipper
We want immediately

One Million (1,000,000)

MUSKRAT SKINS

We are the recognized Muskrat Kings of Canada. We are absolutely reliable.

Our assortments and valuations are the best and fairest that can be obtained anywhere in the world.

If you want the highest possible price ship to us direct, and save the middlemen's profits.

Pay no attention to the fakers who are sending out price lists quoting nearly twice as much as they pay. We are known all over the world as

The Honest Fur House of Canada.

We buy all kinds of Raw Fur in season.
Ship to us, our returns will surprise you.
Our Spring Price List on Muskrats will be issued about March 25th. Write for one.

THE

GEORGE MONTEITH FUR CO.

21 Jarvis St., Toronto, Ont.

Show this advertisement to interested friends.

Britain's Defence Against

COUGHS, COLDS

and all Bronchial Troubles.

You can cure a cold in one night with Veno's Lightning Cough Cure; coughs disappear—well, "lightning" is the only word to describe the quick curative effect of this wonderful British remedy. The reason is that it strengthens the entire bronchial system, helps Nature to cure in Nature's way.

Awarded Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

One in every five of the population of Great Britain takes Veno's Lightning Cough Cure; it is the standard cough remedy in every British Dominion; it is known and valued in every corner of the globe to which British enterprise has penetrated. That surely is proof of merit Test it for yourself; it is the supreme remedy for—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness

Price **30** *cents.*

Difficult Breathing
Whooping Cough
Blood Spitting
Asthma

Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

Mention the Farmer when Answering ads

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, MARCH 21, 1916. Number 12.

P. E. Island's Quality Reputation.

Thirteenth Provincial Seed Fair Scores Another Success.

One cannot read the Prince Edward Island Press and fail to be impressed with the advancement that is being made along agricultural lines by the Island Province.

Prince Edward Island is the smallest province of the Dominion yet like Mickey Free's expression we must say, "the quality of the land is there." A great deal of good is being accomplished by the Institute System in that province. The various meetings are well advertised and well attended. We would also judge that the various members of the Department of Agriculture staff are not afraid to tell the farmers of the province, through reports of their meetings in the public press, what they are planning to do, and what they are accomplishing.

Quality, did we say? Yes, the Prince Edward Island farmer is rapidly learning to put quality into his work and his goods. Quality leaders are leading quality men.

It is most encouraging to learn not only by reading but also by being in close personal touch with many of the best farmers in that province and also with the agricultural leaders and officers of the garden province how the work that is being done is receiving the hearty co-operation of the masses. Dairying is booming in Prince Edward Island and profits therein are being increased, due largely to the keen interest in Cow Testing Association work that is being carried on by Mr. Harvey Mitchell and his assistants.

The egg circle movement is also gaining in favor and is bound to accomplish the ends for which it was organized. The live stock work is steadily accomplishing its aims and so is the Horticultural work.

Perhaps, there is no department of the agricultural advancement campaign that is bringing the Island Province into more prominence than is the good seed propoganda.

Before the war broke out it was always a pleasure to the writer to visit the Island Province and learn at first hand what is being done. Since the enlistment for active service in defence on Home and Empire by so many of the Maritime Farmer's staff, those of us who remain at home have, in order to retain their positions for our boys until they return have redoubled our energies and are shouldering our share of the work in all departments from the Editor's chair to that of Printers' Devil. Consequently we have not been able to visit Prince Edward Island as frequently as heretofore. When our boys return we hope to resume our visits.

We cannot close these remarks without again pointing to the practical work and example set by Rev. Dr. P. C. Gauthier of Palmer Road. He is leading his parishioners not only in spiritual lines, but also in temporal matters. He is a winner. Would there were more clergymen like him, who would realize the importance and dignity of the farmers' calling and work with them and for them as he is doing.

THE RECENT SEED FAIR

The 13th Provincial Seed Fair was held at Summerside on Tuesday, Wednesday and Thursday, February 29th, March 1st and 2nd. The attendance was large, despite the zero weather and the absence this year of the Domestic Science and Handicrafts departments. Owing to the Agricultural Hall being now occupied by the 105th Battalion the usual lectures and other educational features were left out of this year's programme, the fair being held in the Magee building on Water Street—the best building available. Th exhibits, though not so numerous as last year were excellent in quality and especial praise is due to all concerned for the great success attained under the adverse and abnormal circumstances existing in this war time.

The formal opening took place at 2 o'clock on Wednesday afternoon by Hon. Murdock McKinnon, Commissioner of Agriculture, the President, Rev. Dr. Gauthier presiding.

Rev. D. Gauthier, in a short address, referred to the adverse conditions under which the Seed Fair labored this year, but pointed out that whatever short comings there might be the fair had done its good work in the past. It was, in fact, the first Short Course and from it had sprung every forward and co-operative movement throughout the province. This year the exhibits were here as in previous years, but there was no chance to show them to advantage. He regretted that Lieut.-Governor McDonald was absent through illness and called upon Hon. Murdock McKinnon to formally declare the fair open.

In doing so, Mr. McKinnon referred to the sacrifices being made at this time all over the Empire, which had also entailed the Agricultural Hall. All things considered, however, it was a good fair. In remarking upon the excellence of the exhibits he pointed out that whereas in the early days of the Provincial Seed Fair each year marked a great stride in the quality of the seeds shown, Prince County had now arrived at that state of perfection in this regard that the difference from one year to another is not pronounced. As our young men are now being taken from the farm and trained in bodies to make them efficient, so with agriculture it is by co-operation that the best results are to be obtained.

The President then called upon Mr. E. J. Vessey to come to the platform and publicly congratulated him upon winning three cups—taking eight first prizes with nine exhibits. Mr. Vessey was bumped and accorded three hearty cheers. Calls were also made for Mr. Peter Brodie, but the President, remarking that these two prominent farmers were both members of York Institute, excused him for getting on the platform as every one knew Mr. Brodie.

A meeting of the Co-operative Seed Company was held in the Salvation Army Hall in connection with the fair on Wednesday. The President, Rev. J. J. MacDonald, occupied the chair. At a previous meeting the Secretary had been instructed to get prices on the Banner Oats of the members. He reported that he got no satisfactory replies. A committee was then appointed to offer the product to local firms and eventually the Co-operative Seed Company sold its Banner Oats to Messrs. R. T. Holman, Ltd., at 60 cents per bushel as they came from the threshing outfit. A general meeting was then held, presided over by the President of the Seed Fair Committee, Rev. Dr. Gatuhier. He was asked plenty of questions regarding the sale of their lambs and he answered them all in a most satisfactory manner.

"ISLAND AAGGIE DE KOL"

Three year old Holstein heifer, bred by Lea & Clark, Victoria, P.E.I. Sire "Ida Rooker 2nd Vale." Dam "Aaggie Daisy De Kol. This cow gave 70 lbs. a day at Amherst, 2 months after calving. She was never beaten in her class in the show ring. Udder girth, 6 feet 2 inches.

Mr. Thompson, of the Live Stock Branch, then spoke on the care and marketing of wool. He told of the difficulties of the Canadian woolen manufacturers in procuring supplies and pointed out the possibilities of our own sheep industry in this direction. He stated that wool packed as directed by the Live Stock Branch was worth 10 cents a lb. more to the manufacturer than put up in the old way.

Mr. W. J. Reid told of the experiments last year and stated they would be ready to handle all the wool of the province this summer.

Mr. R. Robertson, one of the judges, says that, as was to be expected from the excellent exhibits shown here in previous years, the potatoes were of very superior quality. Although the number of exhibits was not nearly up to former years, almost all of the exhibits showed careful and skilful selections, in many cases being extremely hard to decide between, but very few were shown that might not be placed well up in a prize list. Evidently the exhibitors have recognized the fact that only a well selected and prime quality of exhibits need expect recognition. As usual, McIntyres formed the largest showing and many excellent exhibits had to go unplaced, also in the class of "A. A. V. named" some very good exhibits were still left after the prize ones were selected.

Prof. Tennant, one of the judges of Class C., tells us that the wheat exhibits in Class "C" were of fair quality. Some of the samples were not well graded and in a few of them wild peas were present in rather too large a number. Most of the exhibits in White Fife and White Russian were fairly pure, but the White Chaff was badly mixed. All the wheat was somewhat softer than in 1915.

The first prize white oats were plump and uniform in size. Some of the other entries were not well graded. All the samples showed unevenness of ripening.

Black oats were of exceptional quality, all the entries being good. The first prize lot was very plump and thin in the hull.

Most of the entries in barley were plump, well ripened and well graded.

There was a large number of entries in timothy seed. The first three lots of seed were quite free from weed seeds but were hulled slightly. Some of the samples were not well cleaned. A few entries had to be turned down on account of the presence of sheep sorrel. One entry contained ox-eye daisy. The color of a good deal of the seed is a little dark, due to bad weather conditions at harvest time.

The judges of the exhibits from the Fields of Standing Grain Competitions

(Continued on Page 381).

County Vice Presidents' Reports at the N. B. F and D. A.

Not only was the attendance at the recent annual convention of the New Brunswick Farmers' and Diarymen's Association, at Fredericton, the largest in the history of that body but it also excelled in the quality of the reports sent in by the various county vice-presidents. In other years it was not uncommon to hear the president call only a very few of them. Every county in the province with the exception of Gloucester and Victoria were reported for. Why there were no reports from these two counties we cannot tell—Victoria County farmers certainly gave a good report of themselves by their winnings at the Seed Fair held in the Market Building concurrently with the conveniton.

Following are the Vice-presidents' reports as submitted: —

ALBERT.

Members of the Farmers' and Dairymen's Association of N.B.—As I am unable to be present with you during the sessions of your meeting this year, I desire as Vice-president of the County of Albert to place my report before you as follows:—

The year 1915 is recalled as having an unusually wet and late Spring, which very materially interfered with seeding on late land. The summer was ideal for rapid growth, and was followed by one of the best autumn any country could desire, consequently farmers were able to do much fall ploughing and otherwise prepare for the coming spring.

In this county the banner crop was hay, which was stored in excellent condition, and all those who sold part of their crop secured good prices. All other crops were hardly an average yield.

Everything in the way of produce has had a very ready sale with exceptionally good prices.

From the live stock standpoint we ae steadily advancing from all points. It is a well known fact, by men who are an authority on the matter, that sections of Albert County produce as good beef cattle as are to be found in this province. This is due largely to the fact of the farmers standing to one breed year after year.

The general conditions in the county are in a satisfactory state, plenty of work at fairly good returns for all those that desire such. It is, however, anticipated by farmers that help will be difficult to secure for the coming spring on account of so many of our young men having joined the forces in the great fight, for the freedom and liberty of the world.

In short let me say Albert Co. is on the steady march to progressive advancement.

Respectively submitted,
LEWIS SMITH,
Lower Coverdale,
Vice-Pres. County Albert.

CARLETON.

The President, Officers and Members F. & D. Assn. of N.B. in the 40th annual session assembled; greeting. Owing to the fact that the Vice-Pres. for Carleton is today in the Balkans in the R.A.M.C. Service it is my pleasant privilege to supply a brief sketch of conditions in the county of Carleton from an agricultural standpoint.

Carleton, as a whole, responded generously to the campaign for Patriotic Production and, as a consequence, a large acreage of roots as well as the different grains were planted and sown. The cropping season was good and an immense amount of extra work consequent on increased seeding was carried on to completion in good season. The conditions continued excellent through haying, harvesting and digging seasons and during the fine fall weather much ploughing for season 1916 was accomplished.

Potatoes:—A large area was planted last season and though the yield was rather under average the price has ranged satisfactorily high, price for some time being more than normal.

Oats.—Carleton County acreage was a third—possibly more—than ordinary, and the crop harvested was extremely good.

Wheat.—As in other branches wheat acreage was increased and good returns of very good quality was harvested. Some smart in wheat and oats reported from some sections.

Turnips.—Normal acreage and regulation returns.

Barley.—Good yield and much more sown.

B. Wheat.—Small harvest of this grain and price about on a par with radium.

Hay.—Fair crop and good in quality. A good figure for this staple article and though immense quantities have been shipped Carleton is full of hay yet.

Pork and Beef.—Carleton sells annually large quantities of beef and pork and 1915 has been no exception. The farmers have realized good prices for these.

There are five societies in the county and all are doing something to assist their former members, but none are doing all that could and should be done. This fact is due mainly to the unaccountable apathy of the farmer himself when confronted with a proposition to unite his interests and strength with brother farmers and make an effort to get control of certain items that could be effectively and economically managed by the farmers themselves—as instance Fertilizer Feeds, Seeds and others might be mentioned. This is a fertile subject, bristling with points that might be taken up and discussed to advantage, but all that does not come within the scope of a county report. However, I may say in this connection that some of our societies are making a little headway. Centreville I am told is buying fertilizer ready mixed—for its members,—Woodstock, Glassville, F'ville and Hartland are buying for the second time the chemicals for home mixing. Speaking of what I am familiar I may say here that home mixing is here to stay. For our society I handled last year 80 tons of raw material and not one of our patrons ever home mixed before, and to tell the truth sometimes I was a little uneasy, but things went O.K. and when we called for orders this season we placed an order for 170 tons and could easily have placed four times that amount if proper financial facilities could have been worked out. On our business last season we sold to our patrons a highly satisfactory article at an average saving of $13 per ton and will do about the same this year. This matter of home mixing has been bitterly opposed by those interested in the sale and manufacture, but the Prov. Dept., chiefly through the untiring efforts of Prof. Durost and the officers of the pioneer association, N.B. Farmers Un., it looks mighty good right now for this—shall I say diversion from the old rut. Quite early at my suggestion, our society instructed me to open correspondence with other societies in the county with a view to effecting some kind of a purchasing agency in order to secure seeds for next season on a co-operative price basis. This in my mind would serve, if accomplished, in inaugurating that co-operative institution that will embrace all the farmers buying and selling operations and until that end is accomplished the farmer in this country will have pitifully failed of coming into his own. This little feeler fell flat. Needless to say I was hardly disappointed for I know the men I am dealing with, and let me say that as a business class, the average farmer is the most obtuse man on earth when the subject resolves itself into the line of practical business on the farm for the farmer. However the day will come when this will be different—and God speed the day.

Live Stock.—Large importations of live stock, pure bred of course, have been made by societies and private individuals during the year. In cattle, Holsteins and Durhams leading. In horses the Clyde predominates, and some good ones, both stallions and mares have been brought in. Percherons are also prominent. Very few horses of the light classes for service are noticeable. The price has been good for some time, but has dropped considerably during the last year, still a good horse will bring the high price when the man who wants him finds him.

Sheep in Carleton are a quandry, it is impossible to just tell whether this industry is coming or going. This is totally due to the scrub day nuisance, for our county should from natural conditions, be a grand sheep section.

The Dairy.—Dairying in Carleton is not what it should be, what with her broad and fertile fields and plentiful supply of water this county should be known the wide world over as a dairy section. As it is there are some good individual specimens in all breeds, Holstein possibly leading in favor, and on several farms are to be found fairly good equipment. This work so far as practical knowledge as to results is not up to date by any means, as very very few if any, make an effort to keep any data as to production or expense in connection with their milking herd. Two years ago through the interest of our energetic Sec., Agr. Mr. Doggett, I had the pleasure of being connected with the organization and successful working of a milk testing circle in our county. This created some curiosity, and no little interest, and was the first step I am pelased to flatter myself in introducing more practical work in this connection. This work for the last season was looked after by Mr. Kerr of the Ag. Dept. and will eventually work down to the proper basis of practical feeding and testing, and until that arrives we give as our private opinion that eight in every ten cows in Carleton will remain star boarders. The Babcock test and balanced rations are the ready means to put you wise to conditions in the herd.

An annual Seed Fair is conducted under the direction of the Soc. at Florenceville.

The third crop competition is fairly well patronized.

In closing I will say that our farmers have made elaborate preparations for another "patriotic production" crop and things look fairly good at present with hay potatoes and pork in the Zepplin class. Mr. President this is submitted with best wishes from my county for continued prosperity and increased production.

CHAS M. SHAW,
Hartland.

CHARLOTTE.

In Charlotte Co. the season of 1915 was not a very good one. The spring and summer were cold and dull. Hay was hardly up to the average, but as a rule well harvested. Grain was a good crop with splendid straw. Some wheat was raised and it turned out very well.

The root crop was poor, especially potatoes and turnips. Apples were a failure.

The Agricultural Societies are paying special attention to the improvement of live stock, particularly cattle. They have now quite a number of pure bred cattle in the county, including Holsteins, Ayrshires, Shorthorns and Jerseys.

In their stock we have a number of pure bred sires in the sheep and swine classes.

M. A. REED.

KENT.

Gentlemen,—

I beg to submit my report for 1915.

Season opened late and wet. Seeding except in dry and well drained ground was very late. Much of the grain crop was killed out with the excessive wet and was sowed too late to ripen properly. The hay crop was about the average and owing to favorable weather at cutting time was well cured. Wheat was a fair crop as it is generally sown on highest land. Oats was very much below the average. Root crop, especially potatoes was a very poor crop, due principally to the unfavorable spring, much seed rotting in the ground, and in the county (a few districts excepted)) the yield was very much below the average. Turnips were also a light crop, a heavy frost in August did much harm to garden stock, and to the buckwheat which was a very light crop.

Interest in live stock is increasing all over the country. Several good stalions are kept for services, heavy horses being the favorites.

Ayrshires, Shorthorns and Holsteins are our most popular breeds of cattle. The Agricultural Societies in general have breed Ayrshires which seem to be the favorite in the county. Sheep are increasing in number and in quality.

The operations of the Agricultural Societies are satisfactory and giving satisfaction to the farmers.

The wheat the Agricultural Department sold to the farmers gave good results almost everywhere, and if you permit me I would suggest that the Department purchase some oats and buckwheat for seed and distribute to the farmers . If the Dept. is not taking steps to help in this way a small quantity and poor quality of grain will be sown this spring.

Now about the best way of growing crops under the present conditions, I believe the farmers who have not enough barnyard manure to put a sufficient quantity on their grain and root lands they should buy some kind of commercial fertilizers suitable to their crop and soil. The extra crop they can thus raise will more than pay the expenses.

I have the honor to be,
Your obedient servant,
TELESPHORE ARSENAULT,
Vice-Pres. Kent County.

KING.S.

Mr. President, officers and members of the Farmers' and Dairymen's Association of N.B.

Your Vice-President for King's County begs leave to submit the following report:—

The past season has been one of prosperity for our farmers, notwithstanding the fact that the war cloud still hovers over us, and that many of our young men have answered the call to do their little bit for the flag we all love. This made a shortage of labor, causing many of our prominent farmers to cut down their stock and

reduce their operations to a certain extent. But the increase in the price of all farm produce has more than offset this.

The winter of 1914-15 will long be remembered as the winter when we had no snow, as in King's County we had only about one week's hauling on sleds, must of us had to haul our wood and ice on wagons.

But this state of affairs had one advantage, all preparation for cropping, such as the moving of manure and stone heaps was carried on before the frost was out of the ground.

The spring opened wet and on low ground some fields never became dry enough and were seeded in a condition that could not possibly yield a crop.

The damp season suited admirably the man on the dry upland, and he had a splendid crop of all kinds.

Dairying being our principle line the damp season gave us good pastures all through the season. We have to note an increased interest in the keeping of records which we take to be a good sign.

In dairying King's County still hold the premium position. In 1915 there were 25 cheese factories operated in New Brunswick and of this number 14 are located in King's County.

The total make of cheese was 1,165,-651 pounds and considerably over two-thirds of this was made in Kings. The total make of butter in creameries during 1915 was 258,659 pounds, and about one-third of this was made in King's. From the same county is also sent to the city of St. John a large quantity of milk and cream for table use, and cream for manufacture into ice cream. The four creameries operating in St. ohn are dependent for their main supply upon King's County dairy farmers. As compared with other years the pasture fields during 1915 were maintained in good condition. However, the rains that kept the pastures green were not opportune for some other lines of farm work, but the lesson only points to the wisdom of mixed farming.

We feel that our primary practice is still such as to make it cost us too much to produce a quart of milk or a pound of butter-fat.

By the application of information gleaned from the contesting work and improvement in field cropping we hope to reduce the cost.

The prices obtained for cheese and butter have been very high, altogether the season of 1915 was good for dairying.

That part of our county interested in the production of city milk reports a splendid year with a better dmeand through the summer months, than in past years.

Owing to the stricter enforcement of the regulation laid down by the Board of Health many farmers were compelled to remodel their stables or build new ones, thus adding to the comfort of their stock and making their care a much more plasant duty.

This which at first seemed a great hardship to some, will no doubt prove a benefit to all concerned.

But 1915 has marked a new era in our dairy work, the advent of the mechanical milker, a number of milking machines were installed during the past year and from all reports are giving their owners the best of satisfaction.

In crops the hay crop was heavy all over the county, clover was especially good. The weather for harvesting was not as good as we mig t desire but the most of the hay was harvested in fair condition.

In grain, wheat is not much grown. Oats are our principle crop, they yielded a heavy crop with a good stiff straw.

Buckwheat was a poor crop and in some cases was injured by early frost. Buckwheat meal is bringing at the present time four cents a pound. Potatoes owing to the poor demand in 1914 were not planted extensively, as a result some farmers have barely enough for their own use.

Those potatoes planted only yielded a fair crop. If our farmers wentpotatoe crazy in 1914 they went potatoe again in 1915.

Turnips in our dairy sections after hay are no doubt our most important crop, they are growing in favor each year. Last season owing to the wet weather the seed could not be planted as early as desired, consequently the crop was not as heavy. The warm damp season seemed especially favorable to the diseases which we note with alarm seem to become a more serious menace to our crop each year.

In that section of the county where my lot is cast the problem with us is how to dispose of large crops of marsh hay to the best advantage. We find that with a good crop of turnips we can use it to the best advantage.

If for instance a farmer has 30 tons of upland hay and 40 or 50 tons of marsh hay and straw and carries a stock of four or five horses and 25 head of cattle, 16 of which are milkers, he should be made to yield 1,000 bushels to the acre. If he has these cows come in mostly in the fall or early winter beginning in August and nearly all in by Nov. 11th, he is in pretty good shape for winter milk production.

It will take most of the upland hay for the horses.

He begins to feed his turnip tops in October and they will last about five or six weeks, he then can feed his milking cows a bushel a day, and the young cattle half that quantity till about April 1st, this along with the grain ration will furnish a large amount of milk at a minimum of cost, by April 1st his turnips and marsh hay are all fed and he will probably have enough clover hay to put them up to the time when they will get all they need in the pasture, any cows that have not satisfied him in the way of production will be in good enough flesh to go to the butcher. In past years on these marsh hay farms large quantities of middlings were fed in the effort to make milk it cost in some cases more than half the milk check too pay for the middlings by the feeding of a bushel of turnips the cost can be reduced to one-third, and in some cases less, this on a milk checque of $125 to $150 wounld be saving that would soon pay for the turnips. This is not something I have imagined, but is what is actually being done on some of these farms.

Less than a bushel a day does not seem to give results.

There is more than one reason why we need 1,000 bushels to the acre, it is easy enough to get it if there is any crop we can raise to perfection in King's County it is turnips.

We need 1,000 bushels, first because we need the turnips, second because it is an impossibility to raise 1,000 bushels and a crop of weeds. These two or three acres is the place to raise a fine crop of clean grain next year, and if we seed it it will raise a fine crop of clover the next.

Now on the disease question.

I will give you a hint on that John C. Titus of Bloomfield Station has had a lot of trouble with soft rot in his turnips. Two years ago his crop was scarcely worth pulling, last year he saved the manure for his turnip crop during the summer and early fall when he was feeding green oats and other feeds, besides turnips, he hept apart from the winter's manure, the result was a crop absolutely free from soft rot or other disease.

In fruits, apples are not much grown, though we have some very good orchards that are paying good profits.

The crop was light last season but was of good quality as the spray pump is much more in evidence.

In small fruits strawberries are the principal crop, these wintered well and yielded a good crop and sold at wonderfully good prices considering the crop.

There is a chance for much greater development along these lines as the demand seems to grow every year.

Where our berry growers a few years ago were glad enough to contract at 7 cts. today they consider a twelve cent average nothing to boast of.

Much interest was shown last season in the ground limestone experiments, it is perhaps too soon to look for results from this product which promises so much to our crop producers.

Now I would consider my report incomplete if I made no reference to the good work being accomplished by our Women's Institutes. This organization is doing much to relieve the drudgery of the work in our farm homes, and though we may sometimes have to put up with a late supper and are called upon to test many new fangled dishes.

We believe that the work is doing much to raise our work to a higher plane and will have a powerful effect on our most important crop, that of our boys and girls.

There is one point in regard to the matter which remains to be proven.

King's County has in the past turned out many clever and distinguished men, these are reported to have been raised on pancakes.

Will this new Institute diet have the same effect?

Now lest you think we are getting rich in King's County let us look for a minute at the other side of the page.

Our County has not yet recovered from the effects of the systematic canvas made three years ago by Western Real Estate agents, many of our farmers thinking that their time to get rich had come, hastened to draw from the bank the savings of many years and to hand it over to these fakers, if we judge by their works were not worthy to be classed with the sheep-killing dogs we hear so much about at these Conventions.

The result is some of them are taxed more today on their Western holdings than on their home farms. Quite a number have been compelled to mortgage, and the end is not yet.

Now why did these men invest their money thus? I say it was because they lacked confidence in their own business.

I believe this is a serious drawback. In many of our agricultural districts we fail to have confidence in our own business, the best business under the sun.

We need confidence first to carry through the work of today with enthusiasm. Confidence to plan carefully for tomorrom and next year.

Confidence to invest our own money and some of the other fellows if we need it in our own business.

Thus will we fulfil our duties to ourselves and to the nation which we form so important a part.

L. T. FLOYD,
Bloomfield, King's Co.

MADAWASKA.

To the President of the Farmers' and Dairymen's Association of New Brunswick.

Gentlemen,—

It is a duty for me to present my report to your Association for the county of Madawaska for the year 1915 as follows:—

Hay.—Crop very good. Saved in proper time and in good condition. About 200 carloads have been already exported. Price very satisfactory. Loose, $13.00; pressed, $15.00 per ton.

Wheat.—The crop has been very good for the quantity of seed confined to the ground, and the wheat distributed by the Agricultural Department has been a great success. The flour made with the said wheat has given just as good result as the best imported flour.

Oats.—Crop good and of a good quality. Quantity about the same as last year. Sold at 50c per bushel.

Buckwheat.—Not raised in large quantity now, but of a good quality.

Barley.—The farmers do not cultivate it on a large scale, but the crop raised is good.

Peas.—The samples I saw at our exhibition were of first class. I bought some for my own family, and it was impossible to get a better article outside. It is regretable that the farmers do not cultivate enough to export.

Beans. That line of seed is neglected and put the farmers in the obligation of buying for their own use.

Potatoes.—I am sorry to say that the crop has been about one-third of last year.

Turnips and other roots.—Fair crop, though not enough to export.

Pasture. Very good all over the county.

Colts.—There is a great change in that line. Still I have remarked that one importer alone sold in 1915, 75 draft horses, mostly mares, to our farmers.

Pigs.—Continuation of past year. Th farmers are satisfied to raise any for their own consumation. Not enough to hold the importation.

Poultry.—There is still a great amelioration in that line, as the egg importation has been considerably reduced during last year.

Sheep.—The farmers keep a large stock, and made quite an exportation at profitable price; but could still do better.

Cows.—The farmers have increased their stock considerably on account of the butter and cheese factories being in good operation during the summer of 1915. In 1914 four cheese factories produced 7,277 lbs. of cheese and two butter factories 4,9724 lbs., and the year 1915 has a considerable increase over that.

Apples.—Though the severity of our climate, our farmers had very good exhibits at the last fall fair.

General Remarks.—Last fall the Agricultural Societies have had their regular exhibition, which has been a success in some parishes and contributed considerably to stimulate the ambition amongst the farmers. Still I remark that since the terrible war has been declared, several farmers have made the sacrifice of their sons, to let them go to the front to defend the rights of our Mother land and our dear Canada. I hope they will come back victorious at the end and will be the heroes of our country.

J. A. BERNIER,
Vce-President for Madowaska.

NORTHUMBERLAND.

Mr. President, Members of the N.B. Farmers' and Dairymen's Association.

Gentlemen,—

The year 1915 was not a banner year for crops in Northumberland County on account of a very wet, cold spring, all crops suffered to a certain extent. Some wet land was not sown at all. Hay was a fair average crop. Oats, not much over half a crop. Wheat, while not sown to any great extent, was about an average crop. Potatoes, not a fifty per cent crop.

The growing of wheat has been greatly encouraged by the building of a splendid grist mill at Newcastle. We expect to increase the acreage of wheat greatly in 1916.

Great interest is being taken by the farmers of Northumberland in the Standing Field Grain and Root Competition, also in our local seed fair.

Mixed farming seems to be the most general system system carried on.

One branch of our business and not the least important one, I refer to the Sheep Industry, is, I regret to say, likely to be done away with. In fact a great many farmers have gone out of the sheep business altogether. This has been found to be a fairly profitable industry, but the dogs here, as elsewhere, are putting the sheep out of the county. This is a great pity we

(Cotinued on Page 398.)

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MARCH 21, 1916.

DATES OF ISSUE.

April 4-18
May 2-16
June 6-29

PROTECTION FOR FARM PAPERS.

Every farmer has papers of more or less value that should be placed where they cannot be lost. He has his deeds, insurance papers, tax receipts, and many other papers that should never be destroyed.

Some farmers have a safety deposit box in some bank in the city, others have these papers in a little tin box in the vault of the bank at which business of that nature is transacted; others have them carefully tied up and placed in a pigeon-hole or drawer in the desk at home, while others may have them and may not, depending on whether or not they can be found when wanted.

Some of our farmers are breeders of purebred live stock of different kinds. These are very valuable animals, all recorded, each one having a certificate of registry, which is in possession of the owner of the animal. The pure-bred stock breeder also keeps a herd register of his animals. The certificates of registry, pedigrees of animals nor yet recorded and the herd register are very valuable to the owner, and serious consequences would result should any of them be lost or destroyed.

We have visited many breeders of pure-bred live-stock and had occasion to consult the herd register and some certificates or registry. Generally we have found these very valuable papers kept in the desk. Very seldom do we find the farmers with a fireproof safe in the house.

It is very inconvenient for the pure-bred stock breeder not to have his certificates or registry at home. He must also have his herd register at home. How many of us stop to think what the actual loss would be if these papers and books should be misplaced or destroyed by fire? In many cases the record of many of these valuable animals would be absolutely gone and in consequence the value of the animal reduced to just what it would weigh out.

The item of outlay for a small fireproof safe, large enough for the farmer's needs, would not be large. It is just the same as insurance on your bulldings or live stock. Can any farmer afford to do without this protection, especially the man with a valuable herd of pure-bred live stock?

There is nothing that trains a boy or girl so much as a small piece of ground which they can handle as they see fit.—Prof. Saxby Blair.

* * *

We have listened to much of interest here tonight. Hearing these things, happy are you if you do them.—Shippy Spurr at the opening of the Lawrencetown Agricultural School.

* * *

Rennie's, the well known seed house, Toronto, suffered a severe loss on February 20th, when buildings and contents to the extent of $200,000 were burned. They announced in last issue that they have sufficient seeds stored at their Montreal Branch and in Toronto warehouses to fill their 1916 orders. Despite the fact that their loss occurred on the 20th they resumed filling their orders in the regular way on the 21st at noon.

* * *

Read Prof. M. Cummings' article on his experiments with Ground Lime Stone in the seasons of 1914 and 1915. It pays to use Ground Lime Stone at Truro. Have you ever asked your farm any pertinent questions as to its lime requirements? If you have not, 1916 will not be too early for you to begin. Ground lime stone is now practically within the reach of every farmer who wishes to use it.

* * *

At the recent meetings of the New Brunswick Farmers and Dairymen's Association, Prof. G. C. Cunningham told his hearers that thousands of dollars were lost every year to Maritime potato growers owing to their neglect to plant good disease free seed and also the neglect of not spraying for diseases that set in during the growing season. It pays handsomely to look after all the details of seed selection, treatment and spraying of the entire plot.

* * *

We understand a law is to be enacted in some of the neighboring provinces that will forever do away with the scrub stallion, as well as the unsound pure bred stallion before Father Time has marked off many more mile stones. The warning is out. What will the wily owners of these stallions do in the meantime? They will naturally try to unload their horses on unguarded buyers in the provinces where no such an act is in sight. Will you be one of the farmers who will bite?

* * *

We trust our readers in Carleton and adjoining counties are taking advantage of the short courses in Agriculture that are being held now in the Agricultural School at Woodstock. It is needless for us to repeat that the experience of men and boys who have attended agricultural short courses in the past is that they have been greatly benefitted. "Live and learn." The teachers in charge and your fellow farmers are always throwing out splendid suggestions. Suggestions that will very materially assist you in overcoming the difficulties that confronts you daily in the performance of your farm work.

* * *

He who does not live within his income will some day live without it.

* * *

If an apple diet has helped ex-President Taft reduce his weight, as he says it has, it is no more than we expect of the apple. It only makes good the old saying: "An apple a day will keep the doctor away."

* * *

The Maritime Farmer will not knowingly publish an advertisement of an unreliable firm, nor one which does not do exactly as it advertises. Any subscriber who finds that an advertiser does not do os he promises in his advertisement will confer a favor by telling us his grievance.

* * *

How long are the owners of scrub sires going to dictate the rate of progress that will be made in live stock breeding in the Maritime Provinces? Some people due to sheer cussedness, never castrate their male stock but permit them to run at large, much to the annoyance of their more progressive neighbors who are trying to breed pure bred stock. Scrub sires running at large have often caused a bad feeling between neighbors. This condition ought not to exist. A hard and fast law re scrub sires running at large is badly needed.

* * *

A resolution re scrub bulls was passed at the 1915 annual meeting of the N. B. F. & D. A. What became of it we do not know. Our own opinion is that the wording was too drastic for any intelligent body of legislators to tackle, and we suppose it therefore died a natural death. A law can, however, be enacted that will not be too drastic, and yet be capable of a scope wide enough to protect the progressive stock breeder without the necessity of unpelasant relations with his less progressive neighbors.

* * *

What about the inauguration of a drainage system for your farm during the coming summer? While you are at work with your seeding operations is a good time to mark the wet spots that occur in your fields. A good way to do this is to drive a stake in the centre of each wet spot. Plan your drainage so that either a main or a lateral will traverse these spots. If the work is well done your fields will be, in the future, ready for seeding much earlier than they used to be. Drainage lengthens the growing season.

* * *

In less than half a hundred days the farmers of the Maritime Provinces will be in the field again preparing for the seeding of the 1916 crop. Just as soon as the seeding season opens all hands will be busy and no one can well afford to cease operations in order to get some machine or another repaired. The wise farmer sees to it that every bolt is tight, that every part is in place and where new parts are needed that they are procured and put in place before the busy season opens. The growing season is quite short in Maritime Canada. We need every day of it to produce maximum crops. Let us not shorten our yields by gross neglect of some farm implement.

P. E. Island's Quality Reputation.

(Continued from Page 377).

state that the quality of the exhibits was superior. In wheat the samples were well graded, but there was considerable smut and one sample contained a grain of barley and another of black oats.

In banner oats there were thirteen competitors. The first prize sample was almost perfect—large, uniform, plump, of excellent color and free from any impurities. There were all gradations between this and the poorest sample, which was bright but not sufficiently graded. All the exhibits in this section were particularly good. There were very few exhibits of barley, but they were all good.

Prize List

CLASS A.—Open to members of the Canadian Seed Growers' Association.

White Fife Wheat—1, W. H. McGregor, Central Lot 16.

White Russian Wheat—1, Thomas Waugh, Wilmot; 2, Alex McFarlane, Bedeque; 3, James E. Murphy, Augustine Cove.

Banner Oats—1, W. H. McGregor; 2, Jas. E. Murphy; 3, Alex. McFarlane; 4, Thos. Waugh; 5, Michael McKenna, Newton; 6, Riverside Farm, Bedeque; 7, Judson Simpson, Belmont.

Barley—No first awarded; 2, Thos. Waugh.

Class A., Section 4, Banner Oats—1, Peter Brodie; 2, Melville Bradshaw; 3, Summeesidr Seed Centre.

CLASS B.—Open to exhibitors in standing fields of grain competition, who are not eligible for competition in Class A.

White Russian Wheat—1, Horace Wright, Bedeque; 2, Geo. McFarlane, Fairview; 3, D. B. McDonald, Bedeque; 4, A. J. Hynes, Cherry Valley.

White Fife Wheat—1, E. J. Vessey, York; 2, Wm. G. Taylor, Wilmot.

Wheat (any other variety)—1, G. W. Wood, Hazelbrook.

Banner Oats—1, E. J. Vessey; 2, Calvin W. Wood, Southport; 3, A. J. Hynes; 4, Fred Bulman, Rustico; 5, Horace Wright; 6, Roy MceLan, Central Lot 16; 7, Rev. J. J. McDonald, Kinkora; 8, Geo. McFarlane; 9, James G. McLean, Central Lot 16; 10, Samuel J. Waugh, New Annan; 11, Wm. G. Taylor, Wilmot; 12, Artemas Clark, N. Bedeque; 13, James Gorman, South Melville.

Barley (six rowed) — 1 Horace Wright, Bedeque; 2, Albert Schurman, Central Bedeque.

CLASS C.—Open only for grain that has not been inspected in the field and not eligible for Class A or B.

White Fife Wheat — 1, Horace Wright; 2, S. M. McEwen, Summerside; 3, Riverside Farm.

White Chaff Wheat — 1, Walter Green, Sumerside; 2, Calvin W. Wood; 3, Horace Wright; 4, Calestine Perry, DeBlois; 5, F. C. Perry, DeBlois; 6, A. B. Dickieson, New Glasgow.

White Russian Wheat—1, E. J. Vessey; 2, Philip McNally, Summerside; 3, H. W. Compton; St. Eleanors; 4, Wm. G. Taylor; 5, Riverside Farm.

Oats (White Banner or Danish)—1, Geo. W. Wood; 2, A. B. Dickieson; 3, James Clark, N. Bedeque; 4, Geo. McFarlane; 5, Albert Schurman; 6, Alfred Simpson, St. Eleanors.

Oats (any other variety)—1, E. J. Vessey; 2, Peter Brodie; 3, Geo. W. Wood; 4, Calvin W. Wood; 5, J. H. Arsenault, Urbainville; 6, Walter Green.

Oats (Old Island or Black Beauty)—1, Peter Brodie; 2, Peter N. Porier, St. Louis; 3, E. J. Vessey; 4, Calestine Perry; 5, A. B. Dickieson.

Beans (colored)—1, Horace Wright; 2, J. H. Arsenault; 3, Calestine Perry; 4, D. B. Tanton, St. Eleanors; 5, John M. Peacock, Lower Bedeque.

Fodder Corn—1, Albert Schurman; 2, Peter Brodie.

Garden Corn—1, Horace Wright; 2, Henry Moyse, Central Bedeque; 3, Fred Moyse, Central Bedeque; 4, John Rose, Chelton.

Clover (Alsike)—1, Albert Schurman.

McIntyre Potatoes—1, E. J. Vessey; 2, Peter Brodie; 3, Pope Cook, York; 4, T. B. Montgomery, Travellers Rest; 5, Thos. Stavert, Summerside; 6, Jas. E. Murphy; 7, Malcolm Kelly, Traveller's Rest.

Potatoes, Dakota Reds—1, E. J. Vessey; 2, Peter Brodie; 3, Pope Cook; 4, Thos. Stavert; 5, Reginald Compton; 6, Celestine Perry.

Potatoes, Rose Type—1, E. J. Vessey; 2, Peter Brodie; 3, Thos. Stavert; 4, J. H. Arsenault; 5, T. B. Montgomery; 6, Richard Clark.

Potatoes, Green Mountain—1, Peter Brodie; 2, E. J. Vessey; 3, J. H. Arsenault; 4, Thos. Stavert; 5, Reginald Compton; 6, Calestine Perry.

oPtatoes, any other variety—1, Pope Cook; 2, Peter Brodie; 3, E. J. Vessey; 4, John Rose; 5, Reginald Compton; 6, A. D. Murray, St. Eleanors.

Eschalots—1, J. H. Arsenault; 2, Melville Johnston, Central Bedeque.

Turnip Seed, Swede—1, Horace Wright; 2, W. H. McGregor; Central Lot. 16; 3, A. D. Murray; 4, James E. Murphy; 5, Percy Marchbank; 6, Thos. Stavert.

Mangel Seed,—1, John M. Peacock; 2, Thomas Stavert.

Cabbage Seed—1, James E. Murphy; 2, Amant Gallant, Mont Carmel; 3, Horace Wright; 4, Edward Hogg, Sher-

Collection of Island Weeds (pressed)——1, Miss Laura Fraser, Belmont; 2, Miss Georgie Matthews, Summerside; 3, Belmont School; 4, Marie Compton, St. Eleanors.

Barley, two rowed—1, E. J. Vessey; 2, Calvin W. Wood; 3, Horace Wright; 4, Geo. W. Wood; 5, J. H. Arsenault; 6, Judson Simpson.

Barley, six rowed—1, E. J. Vessey; 2, James E. Murphy; 3, Walter Green; 4, Wm. G. Taylor.

Buckwheat, Silver Hull—1, E. J. Vessey; 2, James E. Murphy; 3, Calvin W. Wood.

Field Peas—1, Walter Green; 2, Riverside Farm; 3, John M. Peacock.

Col. Island Weed Seeds—1, Henry Moyse, Central Bedeque; 2, Fred Moyse, Central Bedeque; 3, Alberta Dunn, St. Eleanors; 4, St. Eleanors School.

Flax Seed—1, Geo. McFarlane; 2, E. S. Vessey; 3, Judson Simpson.

Col. Garden Seed—1, Fred Moyse; 2, Henry Moyse; 3, Fannie Arsenault; 4, Mrs. A. McLeod, Rose Hill.

Timothy Seed—1, Geo. McFarlane; 2, Geo. A. Jeffrey; 3, E. J. Vessey; 4, John W. Profit; 5, Artemas Clark; 6, Alex McFarlane.

Mr. E. J. Vessey, of Little York, won the three silver cups. Two of these now becme his sole property and the other has to be won by him once more to be held for good. They are as follows:

Silver Cup, donated by Hon. John Richard—Best simple 2 bushels oats, White Banner or Lignowo. Best sample Wheat, White Fife or White Russian. Best sample Barley, 6 rowed. To be grown by exhibitor and open to members of Farmers' Institutes only. Cup to be won three times (not necessarily consecutively) before becoming the property of the exhibitor. Won also in 1914 by E. J. Vessey.

Silver Cup donated by F. R. Heartz, Charlottetown—Best sample, 2 bushels oats from fields that competed in the fields of standing grain competition. Cup to be won three times (not necessarily consecutively) before becoming the property of the exhibitor. Won also in 1914 and 1915 by E. J. Vessey.

Silver Cup, donated by Hon. Charles Dalton—For the largest and most creditable number of exhibits in sections 1 to 23 Seed Division. Won also in 1914 and 1915 by E. J. Vessey.

List of Awards at the New Brunswick Provincial Seed Fair.

The following is the complete list of awards at the New Brunswick Provincial Seed Fair:

Wheat

White Fife—1, E. L. Hume, Florenceville; 2, Basil Kirkpatrick, Florenceville; 3, A. R. Gorham, Gorham's Bluff; 4, Donald Innes, Tobique; 5, Henry Gordon, Chatham; 6, Bertram Goodspeed, Penniac, and 7, Leslie Sharp, Keswick.

White Russian—1, Joseph D. Daigle, McLeod's Mills; 2, Henry Gordon; 3, Edward Jarvis, Stanley; 4, Walter Payne, Lake Edward, and 5, William Hood, Stanley.

Red Fife—1, J. W. Stevenson, Gladstone; 2, T. A. Davis, Sussex; 3, Henry Gordon, and 4, Thomas Stevenson, Gladstone.

Any other variety—1, Francois O. Richard, McLeod's Mills; 2, H. B. Parlee, Sussex; 3, Fred Vautour, St. Louis, Kent; 4, T. A. Davis, Sussex; 5, Robert Sealy, Canovic; 6, Edward Jarvis, Stanley.

Sweepstakes—1, Edward Jarvis; 2, T. A. Davis.

Banner

Banner—1, H. B. Parlee, Sussex; 2, Henry Gordon; 3, J. W. Stevenson; 4, Robert J. Shaw, Maryland; 5, G. S. Bremner & Son, Chatham; 6, T. A. Davis, Sussex; 7, W. E. Palmer, St. Louis; 8, Fred Vautour, St. Louis; 9, Inch Bros., Burtt's Corner; 10, Donald Innes, Tobique.

Ligowa—1, E. L. Hume, Florenceville; 2, Basil E. Kirkpatrick, Florenceville; 3, A. R. Gorham, Gorham's Bluff; 4, E. A. McCain, Florenceville.

A. O. V. White—1, Henry Gorham; 2, T. A. Davis; 3, Edward Jarvis; 4, John Inch; 5, N. F. Phillips, Pembroke; 6, Leslie Sharp.

Black Oats—1, Francois O. Richard, McLeod's Mills; 2, Sylvestre O. Richard, McLeod's Mills; 3, David Currie, Tobique; 4, Wm. Hood, Stanley; 5, Edward Jarvis, Stanley; 6, J. W. Stevenson, Galdstone.

Sweepstakes—1, H. B. Parlee; 2, Henry Gordon.

Barley

2 Rowed—1, J. W. Stevenson; 2, David Currie; 3, Fred Mitchell; 4, Donald Innes.

6 Rowed—1, J. W. Stevenson; 2, Edward Jarvis; 3, Henry Gordon; 4, Donald Innes; 5, Theodore R. Martin, St. Basile; 6, A. J. Shaw.

Buckwheat

Smooth Hull—1, H. B. Parlee; 2, T. A. Davis; 3, A. R. Gorham.

Rough Hull—1, J. K. Rossborough, Keswick; 2, N. F. Philips, Pembroke; 3, Jas. W. Smith, Durham Bridge; 4, H. R. Duplesea, Keswick; 5, Edward Jarvis; 6, T. A. Davis.

Potatoes

Green Mountain—1, Bremner & Son, Chatham; 2, H. G. Rideout, Hanwell; 3, W. E. Palmer, Scotch Lake; 4, W. H. Moore, Mouth Keswick; 5, Henry Gordon, Chatham; 6, J. W. Stevenson, Gladstone; 7, H. R. Duplesea, Keswick; 8, B. H. Cormier, Elm Tree; 9, R. J. Shaw, Maryland; 10, Bartram Goodspeed, Penniac.

Irish Cobbler—1, W. E. Palmer; 2, Henry Gordon; 3, A. A. H. Margison, Centreville; 4, B. Goodspeed; 5, W. H. Moore; 6, Ludlow J. Hoyt, Prince William; 7, J. W. Smith, Durham; 8, Edward Jarvis.

A. O. V. White—1, Henry Gordon; 2, W. E. Palmer; 3, Edward Jarvis; 4, A. Goodspeed; 5, A. A. H. Margeson.

Any Rose Variety—1, B. Goodspeed; 2, Hnry Gordon; 3, W. E. Palmer; 4, W. H. Moore; 5, Edward Jarvis; 6, Jas. W. Smith.

Any Red Variety—1, B. Goodspeed; 2, Henry Gordon; 3, H. R. Duplissea; 4, W. H. Moore; 5, Ludlow T. Hoyt; 6, Leslie Sharp.

Any Dark Skinned Variety—1, W. E. Palmer; 2, Henry Gordon; 3, H. B. Parlee; 4, W. H. Moore; 5, A. Goodspeed; 6, H. R. Duplessea.

Turnip Seed—1, L. T. Hoyt; 2, E. L. Hume; 3, Henry Gordon; 4, Robert J. Shaw; 5, G. S. Bremner & Son; 6, W. E. Palmer.

Mangold Seed—1, J. W. Smith; 2, Henry White; [illegible]

Carrot Seed—1, J. W. Stevenson; 2, Bremner & Son; 3, B. Goodspeed.

[illegible] Roots for Seed [illegible]; B. Goodspeed; 2, A. R. Duplessea; 3, Henry Gordon; 4, Edward Jarvis; 5, W. E. Palmer; 6, H. B. Parlee.

Six Mangold Roots for Seed Raising—1, Henry Gordon; 2, [illegible] speed; 3, W. E. Palmer; 4, Henry White.

Red Clover Seed—1, W. H. Venning, Sussex.

Timothy Seed—1, Fred Mitchell, Tobique; 2, David Curry, Tobique; 3, J. W. Stevenson; 4, Thos. Stevenson; 5, G. S. Bremner & Sons; 6, A. J. Shaw.

Alsike Clover—1, W. H. Venning; 2, T. A. Davis.

Potato Onions—1, J. W. Smith; 2, Fred. White; 3, H. L. Duplissea; 4, R. Goodspeed.

Garden Peas—1, A. R. Gorham; 2, H. L. Dupeissla; 3, L. F. Floyd; 4, R. J. Shaw.

Sweet Corn—1, H. B. Parlee; 2, H. R. Duplissea; 3, W. E. Palmer; 4, A. R. Gorham.

Field Peas (large)—1, Henry Gordon; 2, David Curry; 3, Donald Innes.

Field Peas (large)—1, Henry Gordon; 2, T. A. Davis; 3, Edwd. Jarvis; 4, Donald Innes; 5, David Currey.

Beans (white)—1, J. W. Stevenson; 2, R. J. Shaw; 3, Fredk. Mitchell; 4, David Currey; 5, J. W. Smith; 6, Edw. Jarvis.

Beans (colored)—1, Edw. Jarvis; 2, W. E. Palmer; 3, Henry Gordon; 4, Leslie Sharp; 5, H. B. Duplissea; 6, Wm. Hood.

Beans, Yellow Eye—1, J. K. Rossborough; 2, E. L. Hume; 3, H. B. Parlee; 4, Fred Mitchell; 5, John Inch; 6, David Curry.

Corn, Flint—1, E. L. Hume; 2, H. B. Parlee; 3, David Curry; 4, Clowes Currie; 5, H. R. Duplissea; 6, John K. Rossborough.

Special competition open to winners of first five prizes in standing field crop competition.

Wheat—1, Sylvester O. Richard; 2, E. L. Hume; 3, H. B. Parlee; 4, Edward Jarvis; 5, F. S. Taylor; 6, Basil M. Kilpatrick; 7, Donald Innes.

Oats—1, E. L. Hume; 2, Henry Gordon; 3, T. A. Davis; 4, W. E. Palmer; 5, R. F. Phillips; 6, Edward Jarvis; 7, Donald Innes.

Barley—1, H. B. Parlee.

Buckwheat—1, J. K. Rossborough; 2, F. S. Taylor; 3, H. R. Duplissea; 4, Edward Jarvis; 5, Donald Innes; 6, Leslie Sharp.

Potatoes—1, W. E. Palmer; 2, Bremner & Sons; 3, E. L. Hume; 4, Edward Jarvis; 5, Henry Gordon; 6, Leslie Sharp; 7, R. H. Duplissea.

Special competition for members of the Seed Growers' Association.

Wheat—1, Donald Innes.

Oats—1, E. L .Hume; 2, W. E. Palmre; 3, Donald Innes.

Potatoes—1, W. E. Palmer; 2, E. L. Hume; 3, H. B. Parlee.

Special competition for boys and girls.

Wheat—1, Harold Jarvis, Stanley; 2, Albert T. Martin, St. Basile.

Oats—1, Mary Moore, Keswick; 2, Harold Jarvis, Stanley.

If a stud or bolt should break off in a casting so that a pipe wrench or toher tool will not reach it, it can be removed by drilling a hole in it and driving into the hole the three-cornered handle of an ordinary file. The corners will grip the bolt and a monkey wrench applied carefully to the file will unscrew the bolt.

NEW TOMATO "ALACRITY"

Developed by experts at the Central Experimental Farm, Ottawa.

EARLIEST OF ALL RED TOMATOES

ALACRITY produces a closer compact vine, set quite as freely with fine smooth tomatoes which are usually ready to market ten days earlier than any other strain.

The entire crop can be gathered generally in about three weeks from the time the first fruit ripens.

ALACRITY is undoubtedly the very best earliest scarlet fruited tomato.

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HORTICULTURE.

Experimental Work in Top Grafting and Control of Apple Scab in the Lingley Demonstration Orchard 15.

By A. G. Turney, Provincial Horticulturist.

So far all attempts to control the apple scab in this orchard had failed and it appeared that the greater degree of coolness and humidity produced in that locality by the proximity of the Bay of Fundy was unfavorable to, if not absolutely prohibitive of, the profitable production of varieties of apples so susceptible to the scab as Fameuse and McIntosh.

It seemed advisable that the Department should continue to operate this orchard for the following reasons:

(1) To further determine the factor of climate in its relation to the control of apple scab in that and similar districts on varieties such as Fameuse.

(2) That some of the most healthy Fameuse trees may be top grafted to some variety less susceptible to scab, a similar number of trees being left as checks, so that information may be procured as to the amount of fruit produced in each case, and as to the cost of and possibility of changing unprofitable trees into profitable ones by this means.

(3) To determine the part played by scab infested twigs of the previous season's growth in producing the spring infection.

Mr. R. P. Gorham, Assistant Horticulturist, was placed in charge of this work and he supplied the data for the following report of the various operations:

Cost of Top Grafting Old Apple Trees:—The prevalence of apple scab in this orchard and the seeming impossibility of bringing it under control by spraying led the owner to decide on top working the Fameuse over to some other variety. As the trees were about 45 years old and of large size it seemed a good opportunity to obtain information on the actual cost of top grafting this class of trees in New Brunswick. Accordingly the work was planned to cover a period of three or more years as follows:

1. Selection of certain healthy trees for top grafting.
2. Selection of trees of corresponding age and vigor as checks.
3. Keeping records of the cost of labor and materials used in the grafting of these trees.
4. Keeping records of the fruit harvested from both grafted and check trees.

Twelve trees were selected for experimental work. These were in pairs in different parts of the orchard but corresponding as nearly as possible in size of tree, spread of head and general vigor of growth. One tree of each pair was grafted to Bishop Pippin, working over about one-third of the branches the first year, and the other three was left untouched as a check. The trees were marked by driving stakes in the ground beside the trunks and marking on them letters and figures—one leter for each pair of trees. The first in each case being the grafted tree, the second a check tree. The work of grafting gave the above data:

Tree No.	Time Cutting Stubs.	Time Cutting Scions	Time Setting Scions.	Time Waxing Stubs.	Time Total
A.1. 15 stubs on tree	15 Min.	8 Min.	20 Min.	20 Min.	63 Min.
B.1. 10 stubs on tree	8 Min.	5 Min.	10 Min.	12 Min.	35 Min.
C.1. 21 stubs on tree	20 Min.	10 Min.	25 Min.	25 Min.	80 Min.
D.1. 11 stubs on tree	10 Min.	3 Min.	15 Min.	15 Min.	43 Min.
E.1. 12 stubs on tree	10 Min.	6 Min.	17 Min.	20 Min.	53 Min.
F.1. 11 stubs on tree	3 Min.	2 Min.	15 Min.	12 Min.	32 Min.
80 stubs	66 Min.	34 Min.	102 Min.	104 Min.	306 Min.
Average time in Minutes per stub for each operaton	66-.8 25	34-.425	102-1.266	104-1.30	306-3.816
	80	80	80	80	80

Thus the time required in grafting is about 3.8 minutes per stub. With labor at 30 cents per hour this works out at 1.94 cents per stub exclusive of wax and scions.

The 80 stubs required 3¼ pounds of grafting wax, made in the proportion of:—

4 lbs. rosin costing ...	$ .36
2 lbs bees wax costing	1.20
1 tallow costing	10
7 lbs.	$1.66
Melting and working wax, one hour	.30
	$1.96

Total cost of one pound of wax, 28 cents.

Thus the 3¼ pounds of wax used cost 91 cents, or 1.13 cents per stub.

The scions in this case did not cost anything. but charging them at the usual price set for them in New

COWAN'S COCOA
"Perfection Brand"

A Cocoa that is brimful of nourishment containing the beautiful aroma of the finest cocoa beans skillfully blended.

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Manufactured in Toronto, Canada

A-19

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SEEDS

Eureka

Potato Planter

Catalog sent free

The Eureka line of Potato Planters is the largest manufactured. This machine takes only *one* man to operate it. That means less trouble and expense for *you*.

Opens the furrow—drops the seed any distance or depth required—puts on fertilizer (if desired)—covers up—marks for next row. Always accurate and automatic.

It's an easy machine to operate. The steel and malleable iron construction mean lightest possible weight and increased life of machine. Your repair bill will be practically nothing. Plants uniform depth at *all* times because plow is directly under the axle. Dropping mechanism in plain view of driver. Does not injure seed.

We supply planters in three sizes, for one or two rows—with or without Fertilizer Attachment.

For 16 years the Eureka Potato Planter has been successfully used throughout the world.

We also make Eureka Potato Cutters and the Eureka Mulcher and Seeder—a mulcher, smoothing harrow, cultivator, weeder, seeder.

Write today. *Sold by*

FROST & WOOD CO., Ltd., St. John, N. B.

Eureka Mower Co.

Box 745

Utica, N. Y.

Brunswick of 50 cents for 100 sticks, each stick making about three scions, the cost amounts to .32 of one cent per stub. Hence the total cost per stub is as follows:

Labor	$1.90
Scions	.32
Wax	1.13
	$3.35

which, multiplied by 80 gives $2.68 as the total cost for the six trees, or an average cost of 45 2-3 cents per tree.

To this must be added the cost of hauling the brush from the orchard, one man and a horse for one hour at a charge of 35 cents, which equals 5 4-5 cents per tree, bringing the total cost up to 51½ cents per tree.

During the summer these trees were given the same treatment as the others in the orchard, that is, cultivation between the rows during June followed by the sowing of a cover crop. Sprayings were applied on May 10, May 21, June 3, June 17, July 13 and August 14.

The crop which was harvested in October, showed in several cases larger apples and apples of better quality on the trees that had been grafted than on those left as checks. A few particularly susceptible trees, however, showed more scab on the grafted trees than on the ungrafted. For comparison of the yields the crop was measured as picked and a general price of $2.00 per barrel, three run, set. (The actual price at which tree run Fameuse were being sold in other orchards). The yields are given in the following table. The Fameuse in 1915 are designated by the figure 1 after the letter. Check trees, of as nearly as possible the same size and vigor are designated by the figure 2 after the letter.

		Yield.	General Quality.	Value.
Tree	A.1...	2 1-5 bbls.	Poor.	$4.40
,,	A.2...	1½ bbls.	Poor.	3.00
,,	B.1...	¾ bbl.	Good.	1.50
,,	B.2...	1½ bbls.	Good.	3.00
,,	C.1...	1¾ bbls.	Good.	2.00
,,	C.2...	2½ bbls.	Poor.	5.00
,,	D.1...	2 bbls.	Good.	4.00
,,	D.2...	1 4-5 bbls.	Good.	3.60
,,	E.1...	½ bbl.	Good.	1.00
,,	E.2...	1½ bbls.	Good.	3.00
,,	F.1...	½ bbl.	Good.	1.00
,,	F.2...	1 bbl.	Good.	2.00

The six grafted trees produced 7 7-10 bbls. valued at $15.40.

The six check trees produced 9 4-5 bbls. valued at $19.60.

This gives a difference in value of fruit produced of $4.25 between the grafted and check trees, and if we attribute this loss of $4.20 to the removal of bearing wood from the grafted trees, then we must add that amount to the cost of the operations. This amounts to a cost per tree for decreased productiveness of 70 cents which. added to the expense of the previous operations, makes the total cost for one season in top working these trees to another variety to $1.20½ per tree.

On June 24th an examination showed that 289 scions or 72.6% of the number inserted were growing, and 99 were not really growing. Practically all the scions showed signs of life, but a number of them had not mande any distinct growth.

I believe that this is a valuable work, well started, and one that we should carry to a conclusion.

Control of Apple Scab.—On page 39 of the Horticultural Report for 1913, mention was made of the work of W. J. Morse and W. H. Darrow of the Maine Experimental Station on the spread of apple scab. Their work showed that in that State at least it was possible for the spores of the apple scab fungous from affected twigs to germinate and set up new cases of the disease after passing the winter on the trees. The logical conclusion from these results was that if affected twigs could be removed and destroyed before the spores had a chance to germinate, at least a little would be accomplished toward preventing the spread of the disease in spring. With the object of trying this out on a small scale, two trees in the Lingley orchard which were particularly susceptible to apple scab were selected, one a St. Lawrence, the other a Fameuse, both about 45 years old. Three years' work in the orchard had shown that, despite the most thorough spraying given under the supervision of the Horticultural Department, these two trees had never porduced any marketable apples, while the owner stated that never within his memory had they produced any clean fruit. The fact that these two trees were isolated from other susceptible trees by being in a block of Alexander and Duchess made them more favorable for experimental purposes.

After the ordinary spring pruning had been given in the orchard, these trees were gone over carefully with a pole pruner and all of the twigs of the past season's growth were trimmed off, cutting in every case possible below the ring marking the beginning of the growth. The trimmings were then raked together, removed and burned. Afterwards the trees received the same treatment as the remainder of the orchard. As many as possible of the leaves were raked up and burned, cultivation was carried on during June and six sprays were applied during the season. It was the off year for the St. Lawrence tree and it only were of large size, well colored and free from scab. The Fameuse tree bore 4½ barrels of apples, 85% free from scab, and all of good size. It was noted that all the scabby apples on this tree were nearly all on one branch that interlocked with the branches of another tree, and the apples were consequently in the shade.

While the cleaning up of the leaves in the orchard and the sprayinging of the trees pruned, as well as the others not pruned. makes it impossible to say that the results obtained were entirely due to the removal of the twigs, yet the facts that those two trees were the most susceptible in the orchard, that for three years previously they had been sprayed thoroughly without producing any marketable fruit and

(Continued on page 403.)

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PUREST-CLEANEST
MOST RELIABLE
GET CATALOGUE
AT BEST DEALERS
OR DIRECT
190 McGill St., Montreal, Que.

Practical Gardening Tools

TOOLS like these will do all of the necessary work (except plowing and harrowing) economically, whether for home, farm or market garden. You can plant certain crops close and straight, and work them close and safely, with wheel hoes. You save ground, save heavy investment for tools at the start and yet do the best kind of work with profitable results.

IRON AGE *Hand Seed Drills and Wheel Hoes*

Will sow, cultivate, ridge, furrow, etc. better than you can with any old fashioned tools and ten times quicker. Pushed ahead a step at a time, these tools can be worked by women, or grown boys or girls. We show here a few only but we make 38 styles and combinations from which to choose. Prices, $3.00 to $14.50. There are also many attachments for special work

Ask your dealer to show them and write us for booklet "Gardening With Modern Tools." Also, for horse hoes, harrows and cultivators, sprayers, etc.

The Bateman-Wilkinson Co., L't'd 432 Symington Ave. Toronto, Ontario.

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KEITH'S SEEDS

Save Money and Buy Direct from our Seed House

Everything for Farm and Garden. We pay Railway Freight to all points in Maritime Provinces on all orders over $25.00. Be sure and see our Golden Jubilee catalogue before ordering your seeds. It contins a full list of Grasses, Roots, Vegetable and Flower Seeds. Write for one to-day.

Government Standard	Per bushel
No. 1 Mammoth Clover	$17.00
No. 1 Red Clover	16.50
No. 2 Red Clover	15.50
No. 1 Alsyke	13.15
No. 2 Alsyke	11.25
No. 1 Timothy	$5.85 per bus. 48 lbs.
No. 2 Timothy	5.75
(Extra No. 1 for purity)	
No. 2 Timothy	$5.35

Sweet Clover, White Blossom, 19c per lb.
Bags for Clover and Timothy....30c each
We have a small quantity of Grimm or Variegated Alfalfa. If interested, write for prices.

	Bus. bags free
O A C No. 72 Oats	$ 95
O A C No. 3 Oats	2.10
O A C No. 21 Barley	1.10
Marquis Spring Wheat	1.90
Black Tares	3.75

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The Provincial Chemical Fertilizer Co., Ltd.,

ST. JOHN, N. B.

announce that in addition to their regular Brands of Fertilizer, so well and favorably known throughout the Provinces, they are prepared to furnish

Pulverized Lime Stone

and Land Plaster

on very favorable terms, in either bulk or bags and solicit inquiries.

POULTRY SUPPLIES.

DAIRYING.

How a good Farmer makes Money During the Winter Months.

In nearly all business enterprises there are slack months during the year in which the merchant, manufacturer, farmer and others do not make a profit.

These dull months come at certain regular periods and give the business man no end of worry and trouble. There are, however, a few men in every business who know how to take care of these periodical depressions, and they stand out as the most thrifty and prosperous.

As a rule a business depression comes to the farmer during the winter months (October to March), and he is 'at sea" to know what to do to make profits. It is very discouraging to him to see his hard-earned summer money spent daily for the necessities of life, or else to have his savings cut down by some unlooked for expense. If he is not so fortunate as to have savings, he may be compelled to go into debt.

Many of the good farmers in every community have been up against this proposition, and how to make money during the winter months is often asked. There may be several answers to this question, but one of the most practical is, 'Follow Winter Dairying."

The busines farmer of today is giving the various branches of agriculture, soils, grains, fruits and livestock very careful study. He is a general farmer, so has all the branches of agriculture to consider. He knows soils, grains and fruits must be closely observed during the summer, and that livestock can be handled to good profit during the winter.

He also knows a good dairy cow is the most economical producer of human food on the farm. He calls a good dairy cow one that will average a pound of butter-fat daily or 365 pounds yearly. He knows there is greater demand for butter-fat during the winter months, and the price will be from 5 cents to 10 cents higher than it is during the spring or early summer months. If the price is 20 or 25 cents per pound for butter-fat during the flush of the year, it generally is 30 to 35 cents during the winter months.

According to experimental data it takes from ten to fifteen minutes daily to milk and care for a cow that gives an average of 1 pound of butter-fat per day, and by producing this butter-fat during the winter months he will receive at least 30 cents per pound, or a gross income of $1.20 per unit hour labor for milking, to say nothing of the value of the skim-milk, or of the calf, and the manure which he uses as fertilizer to grow better crops.

Dairy Work in Winter Shows Best Returns

Knowing there is no other branch of agriculture that will give him such handsome returns per unit hour during the winter he becomes enthusiastic, builds a silo, uses silage for feeding his cows, and has a herd of ten to fifteen cows instead of one to five.

Instead of keeping "scrub" cows and a poor grade "scrub" sire for breeding purposes, he keeps a pure-bred dairy dairy sire and weeds out his poorest cows by applying the Babcock butter-fat test to their milk.

He gives steady employment throughout the year, and thereby obtains the best of labor, because short-time positions do not attract the best kind of help. Due to this fact his fall calves receive the best of care and attention, where, if the calves came in the spring, the busy time on the farm, they would be neglected.

Use of High-Grade Separator Most Essential in Winter

He knows that the butter-fat exists in milk in very small fat globules, and these fat golbules are generally the smaller and of the greatest number during the winter months. He also knows cold weather will reduce the temperature of freshly drawn milk very quickly, and knowing these facts he is desirous of reducing the butter-fat loss in his skim-milk to a minimum, so he uses a good cream Separator to separate his milk.

There are many farmers who are milking one to five cows during the winter months and who do not appreciate the real value of dairying to the other branches of agriculture. They are the class of farmers who do not make money during the winter months, because they follow wasteful methods and lose large quantities of butter-fat. They are feeding butter-fat, which is worth $600 per ton, in their skim-milk to their calves and pigs, when they could get the same results if they would add the vegetable fats in corn, oil meal and other concentrated feeding stuffs worth $60 a ton, to their warm, freshly separated skim-milk. It will be genuine economy on their part to buy the best cream separator made, and reduce their butter-fat losses to a minimum.

Savings Effected by a Good Cream Separtaor

From our practical experience with nearly 2,000,000 users of the Cream Separator, a modern centrifugal cream separator will save the farmer at least $15 per cow per year over the gravity or hand-skimming system, and about one-half that amount over the cheaply constructed centrifugal cream separator. In other words, a No. 10 size machine that will save $15 per cow per year on a $65 investment will be giving the farmer a minimum return of over 23 per cent on his investment on each cow for every year of the separator's life, and if he has five cows he will make $75 yearly, or $10 more money than the original cost of the separator over the gravity system of separation.

If the farmer who is using the gravity system of separation or a cheap centrifugal separator will discard it and use our System of Separation he will make profits. This is what the aforesaid successful farmers have done. In other words, they thoroughly analyzed their failures, which pointed out to them the "reason why" and indicated the way that led to their final success.

It Doesn't Pay to Wait

By far too many farmers make the most serious mistake of deferring the purchase of a cream separator until late spring when the cows are in full milk. No greater economic mistake can be made. During the winter months the loss by impractical separation is excessive. This loss can only be stopped by the use of a separator. The fact that the amount of milk is small is a poor excuse for throwing high-priced butter-fat to the calves and hogs. It is the daily saving, regardless of seasons, which determines the yearly profit.—J. D. Jarvis, Advisory Expert, De Laval Department of Dairy and Creamery Improvement.

Stop that weary waste of Time and Money which goes with Hand-Milking!

You can milk more cows in a fraction of the time—you can increase the average yield—improve the purity of the milk—and do without extra hired help—by using the

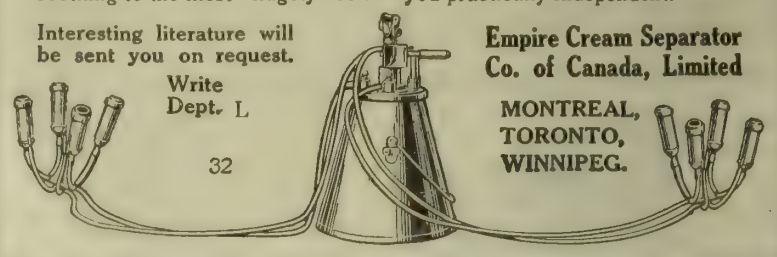
EMPIRE MECHANICAL MILKER

One man with a small "Empire" outfit, consisting of one double unit, can milk ten to fifteen cows in half an hour. One man can operate two double units.

The action of the "Empire" is just like that of a sucking calf—is soothing to the most "fidgety" cow—usually increases the flow—and protects the milk from dirt and germs.

And, what is perhaps most important of all, the "Empire" Mechanical Milker solves the problem of hired help and makes you practically independent.

Interesting literature will be sent you on request. Write Dept. L 32



Empire Cream Separator Co. of Canada, Limited

MONTREAL, TORONTO, WINNIPEG.

The Grading of Cream in Cream Gathered Creameries.

(By W. A. MacKay)

The question of quality is of prime importance in all food products and in no food product is it more essential than in creamery butter. This is becoming more important yearly as the quantity of creamery butter manufactured is incerasing, and our butter will have to compete in stronger markets with butter from the other Provinces and other countries. Consequently the highest possible quality has got to be manufactured.

To have the highest quality of butter the creamery man must have the finest quality of cream. Regulations are now being enforced whereby the creameries have to be kept up to a standard of efficiency whereby the patron has the assurance that the best quality of goods can be manufactured; but without the best quality of cream, the butter maker is helpless. Consequently cream grading or paying for the cream according to quality.

It is not fair that a patron who provides ways and means and keeps his cream in a nice, sweet, and well flav-

Better Butter— Bigger Profits!

If you wish your butter to be smooth and uniform, use the

"BRITISH" Butter Worker

Adopted by the best dairies in Gt. Britain and Canada. Makes the butter firm–even–consistent all through. Results in better butter and bigger profits!

Sold by dealers everywhere. Three sizes — 14 in., 17 in. and 20 in. wide.

Maxwell's Limited, St. Marys, Ont.

Always the Same PURITY FLOUR

Day in and Day out.

Week in and Week out.

Year in and Year out.

Always the same.

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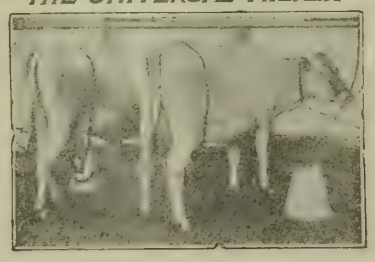
HINMAN *THE UNIVERSAL MILKER*



HELP is Scarce and HINMAN MILKERS do the Work

Be INDEPENDENT.
Use a HINMAN.
Price $50.00 per unit.

H. F. BAILEY & SON, Galt

Sole Manufacturers for Canada under HINMAN Patents.

G.S. CHITTICK, Penobsquis, N.B., Salesman

A Sure Prize Winner

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 178

cred condition, should receive a premium on it over and above the patron who is negligent and careless and allows his cream to become sour, not cooled or well stirred and 'off" flavor, so that it will not make the finest quality of butter? It is to overcome this unfairness that we should adopt "cream grading."

History of Cream Grading in Canada

Cream grading in Canada started in Alberta, and has since been adopted in all the Western Provinces. The result is that the quality of the butter in these provinces has improved wonderfully during the last few years and is now taking its place among the finest butter in the world. The Dairy Superintendents from these Provinces, report as follows:

"The fact of the matter is that, generally speaking, so much good advice has been handed out to creamery patrons everywhere that they know pretty nearly what they ought to do to supply the right quality of cream. It just takes a little incentive, such as the pay for quality principle provides, to bring them into line.'—Marker, of Alberta.

"Cream grading is just to the producer. Grading was comemnced in the co-operative creameries and one of the first testimonials to the success of the system is the fact that it has been adopted, as far as I know, by every privately owned creamery operated in the Province."—Prof. MacKay, Saskatoon, Sask.

"Grading is just and it certainly is a great factor in improving the quality of the cream. As our creameries are operated on the same basis as yours in Nova Scotia, I see no reason why you should not introduce and successfully carry out the grading system. Get your creameries to stand loyally by each other."—Prof. J. W. Mitchell, B. A., Manitoba Agricultural College.

Cream Grading in Nova Scotia was first proposed by Mr. George H. Barr, Chief of the Dairy Division at Ottawa, at the Annual Meeting of the Farmers' Association in 1914 and at the Annual Convention of the Dairymen's Association in January, 1915, where he recommended the adoption of it as just in all the cream gathered creameries.

Nothing was done, however, in a general way until it was tried out for a season as an experiment in the Government Demonstration Creamery at Baddeck, C.B., and the results of the seasons' experiment have been so successful in getting a better qaulity of cream that after the report was presented to the Annual Convention of the Dairymen's Association in January, 1916, a resolution was unanimously passed recommending that all the creameries in the Province adopt the system of cream grading beginning with the Spring of 1916.

The system as recommended for the present is two grades, a premium of two cents per pound being paid for grade No. 1, over grade No. 2. Anything below grade No. 2 will be refused. The cream will be graded at the weigh stands by the weighman in charge; it is recommended that grade No. 1 be indicated by a white tag on the can, and grdae No. 2, by a yellow or some other color of tag.

Definition of Grades. No. 1 Cream sweet, of good flavor, smooth and containing not less that 20% butter fat.

No. 2.—Cream that has soured, flavor not good, not smooth or containing less than 20% butter fat.

The aim of the Department of course is to have as much as possible in Grade 1, and eliminate grade 2 as quickly as possible. It is comparatively easy to have all Grade 1 cream, if it is delivered at least three times a week during the summer weather and twice a week during the balance of the year. The following suggestions if followed out, will assist materially in always having grade 1 cream.

1. Separate milk as quickly as possible after milking, aiming to have your cream test about 30% butter fat. If using deep setting cans, keep the cream rich as possible. Don't try to send cream off shallow pans.

2. Cool the cream as soon as possible to below 50° if possible and at least below 60°. Cool by setting in cold water or water and ice. It is practically impossible to keep cream in the average cellar without cold water surrounding it.

3. Don't add fresh cream to the old until it has been thoroughly cooled.

4. Stir the cream regularly at least twice a day, using a saucer shaped stirrer. The cream after being cooled can be kept in the can in which it is to be shipped.

5. Keep everything clean; wash the separator after each run; and scald and air everything with which the cream comes in contact. The liberal use of wyandotte or some other cleanser is recommended.

Cream grading commences at your creamery on ..... and continuously thereafter. We ask for your co-operation to have nothing but the finest grading of cream and butter.

$15 95 UPWARD ON TRIAL

Fully Guaranteed

American CREAM SEPARATOR

A SOLID PROPOSITION to send a new, well made, easy running, perfect skimming separator for $15.95. Skims warm or cold milk; making heavy or light cream.

ABSOLUTELY ON APPROVAL

Bowl a sanitary marvel, easily cleaned. Different from picture which illustrates our large capacity machines. Shipments made promptly from Winnipeg, Man., Toronto, Ont., and St. John, N.B. Whether dairy is large or small, write for handsome free catalog. Address

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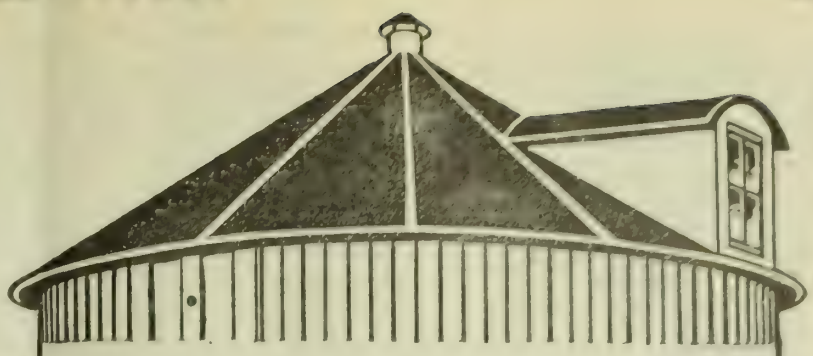
PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.



Now is the Time to Plan for Your Silo

Settle the silo question now before the rush of spring and summer work comes on. You need a silo. Decide now to have one for next winter. It will pay you. Silage increases milk flow at least 20% and reduces feed cost 15 to 20%. It is the best investment you can make.

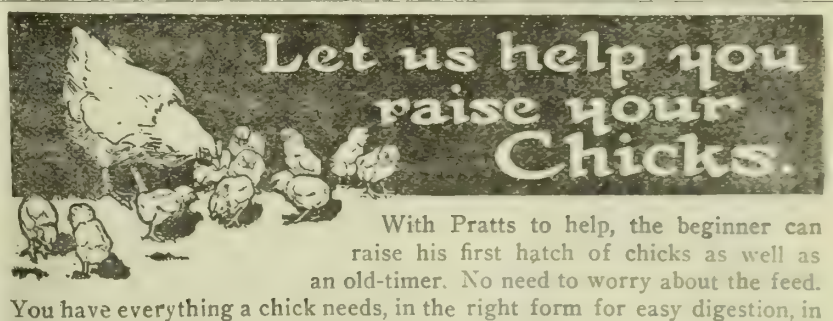
IDEAL GREEN FEED SILOS

insure better silage and cost less for the service they give than any other silo. Do not make the mistake of buying a "cheap" silo, or "cheap" silo material. You cannot save money that way. Silos that are offered to you with emphasis on their low price are expensive and wasteful. They do not preserve the silage as well and do not last as long as an Ideal. Every dollar you invest in an Ideal brings greater returns than money invested in any other. Ask for catalogue and all the facts that prove that you get by far the most for your money in the Ideal.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Catalogues mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER



With Pratts to help, the beginner can raise his first hatch of chicks as well as an old-timer. No need to worry about the feed. You have everything a chick needs, in the right form for easy digestion, in Pratts Baby Chick Food. Big Poultrymen who raise thousands of chicks buy Pratts Baby Chick Food by the ton. They know this completely solves the feeding problem for the first three weeks.

Pratts Baby Chick Food

25c. packages and larger money-saving sizes up to 100 lb. bags. Sold at all dealers, on our Money Back Guarantee.

White Diarrhea—comes to chicks from the mother hen. Guard your flock with Pratts White Diarrhea Remedy—an effective preventive.

Keep Lice Away.—Don't let the chicks get a set-back. Dust them often with Pratts Powdered Lice Killer.

Do not expose young chicks to disease germs. Use Pratts Disinfectant in pens, brooders, coops, and incubators. It's money and time well spent.

FREE—64-page "Poultry Wrinkles" a [illegible] daily assistance to Poultrymen.

Pratt Food Co. of Canada Limited

68F Claremont Street, Toronto

Gardening for Pleasure and Profit

demands careful selection of seed, for unless you plant the very best seeds you are partially wasting your soil and fertilizer, as well as your time and labor. The safe selection is

Ewing's Reliable Seeds

—the favorites throughout Canada for over Forty Years. Market and amateur gardeners alike prefer Ewing's Seeds because they show a very high percentage of germination, and produce uniformly vigorous plants of the choicest strains.

If you have any place at all for it, be sure to put in a garden this spring—and be sure, too, that you plant the right seeds—Ewing's. Write for our Illustrated Catalogue and if your dealer hasn't our seeds, order from us direct.

42

The William Ewing Co. Limited
Seed Merchants
McGILL ST. MONTREAL

Clover Seed Growing in Nova Scotia.

Last summer the Nova Scotia Department of Agriculture, on the advice of S. J. Moore, Dominion Seed Inspector, offered to place a clover huller at the disposal of farmers in North Colchester and Pictou and Antigonish Counties, provided they would agree to save a certain amount of both first and second growth clover for threshing. The offer was accepted and the huller, the first one operated in the Province, was delivered at River John last fall. The results realized point to the possibility of farmers growing considerable clover seed at least for their own use in the Province.

The following report from A. C. Tattrie, a graduate of the College at Truro, now farming in River John, who had charge of the machine, while it was in his part of the Province, is sure to prove of value and interest to those farmers whose operations may be hampered by the high prices now prevailing for clover seed. He writes:

"While here it threshed about thirty five hundred weight of seed, consisting of Common Red, Large Late, Alsike, separate and mixed with Timothy in many cases."

"Towards the last, three hundred weight was threshed in six hours. The clover seed obtained seemed to be of good quality especially where it was allowed to become fully ripened. In many cases, however, the hay was cut too green, which greatly reduced the yield and quality of the seed obtained. The yield from first growth clover would run from two to three hundred pounds of seed to the acre. The second growth clover was in every case cut too green, yielding only about forty pounds to the acre; heads would go through the mill without being threshed, but when they were examined they contained only immature, shrunken seed. This accounts for a considerable part of the difference in yield between first and second growth. However, the seed obtained from the second crop was practically free from weed seeds. The most prevalent weed in the first growth was sheep sorrel.

"To any farmer who saves clover next year for the first time, I would say, select a piece that stand up good, and then let it ripen until the heads and the stalks are mostly black. Of course, in a damp season this is very difficult, but cut it when the most of the heads are black. Alsike clover shells easily and must be handled carefully and cut slightly greener.

"The self reaper is an excellent machine for cutting the clover wit', as it leaves the hay out of the path of the team and the sheaves are convenient to turn, and then get it well dried to insure good work at threshing time. Keep a piece of the first growth to be sure of a crop and then save any second growth you can."

Arrangements will be made on application to further extend the usefullness of this clover huller. It is not likely that Nova Scotia farmers will grow much clover seed to sell but the great advantage which they will derive from growing at least some of their own seed will be the more liberal use of clover seed of their farms, and the more liberal growth of clover will mean richer fodder for the cattle and enriched farms.

M. CUMMING,
Secretary for Agriculture

Should Nova Scotia Farmers grow More Wheat in 1916.

Th amount of land ploughed in Canada and especially in Western Canada last fall was considerably less than in the previous fall, as is evidenced by the following quotation from the November issue of The "Census and Statistics Monthly," published at Ottawa:

"For all Canada about 54 per cent of the area intended for next year's crop is reported as ploughed by Oct. 31, as compared with 61 per cent last year and 54 per cent in 1913. In the Northwest the percentages are as follows: Manitoba 36, against 92; Saskatchewan 27, against 77; Alberta 34, against 56."

In Ontario, 25 per cent less land is reported to have been seeded to fall wheat, the principal wheat crop of that Province, than in the previous year. Moreover, agriculturists fear that, owing to an unusually open winter, the crop will not do as well as usual.

So far as fall preparations are concerned, everything points to a reduced wheat crop from Ontario west. This shortage may or may not be made up in the spring. Everything will depend upon the character of the weather then and also upon the nature of the growing season. In general, Spring ploughed land cannot be depended upon for a crop in the West to the same extent as fall ploughed land. Should either Spring or Summer conditions fail, there is sure to be a shortage in the wheat crop from Ontario west.

On the other hand, it is estimated that the visible supply of wheat in United States and Canada is 41,000,000 bushels more than a year ago, and an English authority estimates the world's supply is large enough to last until February, 1917.

Aside from agricultural consideration, one must remember that prices for wheat will be largely affected by th status of the war next fall, a matter in regard to which no one can at the present time make any certain prediction.

Summing up the whole situation, it seems wise to counsel farmers in Nova Scotia to prepare for the worst that can happen by growing just a little more wheat than formerly. Should next season be a favorable one or should the war be successfully terminated, it is altogether likely that prices for wheat and flour will not go up. But things may turn out otherwise, and as no serious loss can be sustained by those who do grow a little more wheat, it would seem to be a wise provision to prepare for the worst that may happen.

It seems needless to advise farmers that wheat requires better soil conditions than oats, or in fact any other cereal crop, and that accordingly it would be the height of folly to grow wheat on all kinds of land. An acre or two of wheat grown on well prepared lands may, however, be highly valued next fall. The methods of cultivation and varieties are discussed in the Annual Report of the Secretary for Agriculture, which will be available for free distribution shortly.

M. CUMMING.

HINMAN CO. WINS IN BIG PATENT SUIT

GIVEN JUDGMENT WITH COSTS.

Hinman Milking Machine Company of Oneida Awarded Damages in U. S. District Court Against the Visible Milker Company for Infringement —Watertown Concern Restrained —Judge Ray's Decision.

The following is from the Oneida, N.Y., Despatch

Judge George W. Ray of the United States District Court just handed down a decision in the action brought by the Hinman Milking Machine company of Oneida against the Visible Milker company of Watertown for infringement of patent, in which the court directs an injunction and judgment against the Watertown concern with full costs and an accounting to fix damages.

The decision is a notable victory for the Hinman Milking Machine company, whose machines, which have gained a world-wide reputation, have been imitated and infringed in various yparts of the country because of their sound basic principles and wonderful success.

The action was brought by the Hinman Milking Machine company to restrain the Watertown company from committing further infringement on the complainant's (Hinman's) patent and for damages for the infringements already committed. This case was tried in Uited States District Court at Syracuse, Aug. 31st and Sept. 1st and 2nd, 1915. Attorney Ralph H. Woolver of this city appeared for the Hinman Milking Machine company with Attorneys H. P. Dennison and E. A. Thompson as counsel. The Visible Milker company was represented by Attorneys John Conboy of Watertown and Fred Gerlach of Chicago.

What the Decision Means.

This decision gives the Hinman Milking Machine company a practical monopoly on the manufacture and sale of the valve-type milking machine industry, and it was in anticipation of a favorable decision that the company recently enlarged its plant on Elizabeth street to about double its former capacity. Their product is sold in every state in the Union, in Canada, Mexico, South America and a number of European countries, and orders from new territory are received almost every day.

H. F. BAILEY & SON
GALT, ONT.
Sole Manufacturers for Canada
Under Hinman Patents.

Management of Calving Cow and Calf.

Where the herd has increased to the extent that it contains females of the various ages, they should be divided into lots of the same size and age. They will then make a better appearance before the visitor or intending purchaser. By taking him to a pasture where there are only the matrons of the herd he is impressed more than if there were a lot of yearling and two-year-old heifers mixed in among them. A pasture in which there are a lot of well-grown, thick two-year-olds looks better without the thinner cows being with them. And the yearling heifers may need a little extra feed which can only be given them when in a pasture with no others. In many ways we find it advantageous to have each kind separate.

When the cows are near to calving

Large Farm with Live Stock and Implements for Sale

Four hundred and fifty acres, of which about 325 acres are cleared, 50 acres excellent meadow, balance in wood lots and timber. 1 1-4 miles from Sussex Station. In good state of cultivation. Have kept as high as 120 head of cattle and 10 horses. All modern farm machinery, including Empire milker. 45 head milch cows and upwards of 50 head young cattle, Ayrshires and Ayrshire grades.

For further particulars apply to

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TRY .AN .AD. .IN .THE .MARITIME .FARMER—IT .PAYS

The Fire-proof permanent roof is the cheapest

A FIRE can wipe out the savings of a lifetime, and human life as well. But lightning or fire cannot harm the building that is roofed with "Eastlake" Galvanized Shingles and sided with "Metallic" Siding.

Why risk your family's safety, or your buildings and belongings when the cost of a permanent, fireproof, "Metallic" roof and wall is little or no more than for inflammable kinds.

Before you build or repair write us for free booklet and information. We can show you *real economies* in many ways, including lower insurance rates.

We also make "Metallic" Ceilings, Corrugated Iron, Roof-lights, Ventilators, Silo-roofs, etc.

"EASTLAKE" GALVANIZED SHINGLE

Metallic Roofing Co. Limited
Toronto
Winnipeg

they should be turned into a small pasture located near the barns, so that they can be carefully watched. If everything is all right they may not need any assistance. But if a cow is too long in labor she should be taken into the stable and an examination made, because an undue length of time in labor hah a tendency to weaken both the mother and the calf. After the delivery is made see that the cow dries the calf. This is most cases she will be impelled by maternal instinct to do, but some cows, especially heifers with their first calves, sometimes need a little help. If she will not lick the calf her attention should be called to the calf by turning it over. Sometimes a little bran or meal or salt sprinkled on the calf will cause her to do her duty, but in some cases she will do nothing except butt the calf over whenever it attempts to get up. In this case the cow must be tied up in the stable, the calf dried by vigorous rubbing with coarse cloths, and then suckled.

Once it is filled with milk the cow will have learned her maternal duties. It will usually be in condition to take care of itself. For two weeks it should not be away from its dam more than a couple of hours at a time, as it needs a little milk at a time and needs it often. If allowed to get too hungry the calf will take an overdose when the opportunity offers, and indigestion will result from it. But after six weeks it will probably begin to eat a little mixed meal and bran, then the calf may be kept away from its dam. A little of this mixture should be kept in a box which is conveniently located for the calf to find, allowing it to suck twice a day. Given mother's milk twice a day and what grain it will eat, the calf will make a good growth and do it without being very much bother to anyone. To be sure if its early life comes in the winter it will need a good warm place to stay at night, but be sure to give enough exercise to keep the calf good on its legs. If it is summer time when the calf is born keep it away from the flies during the day, always remembering the food. Plenty of food and plenty of exercise always prove the making of the calf. The calf makes your profit if you get any. Keep up this feeding until the calf is six or eight months old. It will be a good eater by this time, and may be put on feed alone. The change will come so gradually that it will not be noticed.—"Breeders' Gazette.

S. C. White Leghorns

Winners at Amherst, Halifax and Sydney. Eggs for hatching, utility $100 Exhibition $2.00 per 15. [Special pens prices on application.)

CHAS. JOHNSTON
Springfield Farm
Box 227 North Sydney N. S.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

Registered Ayrshire Bulls For Sale.

Four P. B. Ayrshire Bulls. No. 1 is one year old. Winner of 1st Prize at last Exhibition. Dame produced 13183 lbs milk and 530 lbs butter fat in 12 mos. R. O. P. Test. His Sire's dam produced 11365 lbs of milk and 511 lbs butter fat as a 4 yr old in 12 mos R. O. P. Test.

No. 2 is 18 mos old. Prize Winner at Exhibition. His Dam now in R. O P. Test has produced in first two months of Test 2802 lbs milk and 121.4 lbs butter fat. His Sire is from Dam of above Bull.

No. 3 is 3 mos. old. His Dam is same as No. 2.

No. 4 is 7 mos. old. His Dam qualified in R. O. P. Test with High Records. These Bulls are all in Excellent Condition.

ARTHUR S. DENNIS,
"Willow Farm,"
Stewiacke, Col. Co., N.S.

Feeding Draft Colts for Size.

I have a colt that was foaled on April 23. On July 6 he weighed 506 pounds. He is a registered Shire. His dam weighs 1,900 pounds and his sire 2,000 pounds. On November 1 he weighed 840 pounds. Is that a good weight?—A Subscriber.

This colt is of good size and is backed by ancestry of the same sort. Continued liberal feeding of bone and muscle-making foods, with plenty of exercise, will enable him to grow into a real drafter. The feeding that wins out is the steady persistent kind; neither over-feeding and over-fatness nor under-feeding and lack of size are best for all-around results. Reports by our readers of methods used in sucecssfully growing out young drafters make useful and interesting reading.—J. L. Edmonds, Illinois Experiment Station.

Cull Weak Chicks Early.

From the time chicks are hatched until maturity the flock should be watched to remove any birds which show signs of weakness or lack of inherited vitality. It has been proved by experiments that chicks naturally weak at birth never make profitable birds to raise to maturity either for egg production or for meat.

It is good practice when the chicks are about a week old to separate those which show lack of vigor. Keep them by themselves, feed for rapid growth and dispose of them at the squab-broiler age.

Make another sorting out of the flock as soon as sex can be accurately determined, or about the 10th week. Take out all males and those which ar enot to be kept for breeders and feed especially for meat growth. If Leghorns are kept, they should be sold as soon as the market will take them for light broilers, for after a short time, even if they are strong and full of vitality every pound of meat they take on will cost more than may be realized for it in the fall.

WHICH WILL YOU BUY

A "Cream Thief" or a "Savings Bank" Cream Separator?

WITH a great many machines or implements used on the farm it doesn't make much difference which of several makes you buy. One may give you a little better or longer service than another, but it's mostly a matter of individual preference and often it makes little difference which one you choose.

Not so with buying a cream separator, however.

There is a big difference in cream separators.

The most wasteful machine on the farm is a cheap, inferior or half worn-out cream separator.

The most profitable machine on the farm is a

DE LAVAL

Cream Separator

A cream separator is used twice a day, 730 times a year, and if it wastes a little cream every time you use it, it's a cream thief," and an expensive machine even if you got it as a gift.

But if it skims clean to the one or two hundredth of one per cent, as thousands and thousands of tests with a Babcock Tester show the De Laval does, then it's a cream saver, and the most profitable machine or implement on the farm—a real "savings bank" for its fortunate owner.

But cleaner skimming isn't the only advantage the De Laval user enjoys.

There are many others, such as longer life, easier turning, easier washing, less cost for repairs, and the better quality of De Laval cream, which, together with its cleaner skimming, make the De Laval the best as well as the most economical cream separator.

If you need a De Laval right now there is no reason why you should let its first cost stand in the way, because it may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

A De Laval catalog to be had for the asking tells more fully why the De Laval is a "savings bank" cream separator, or the local De Laval agent will be glad to explain the many points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

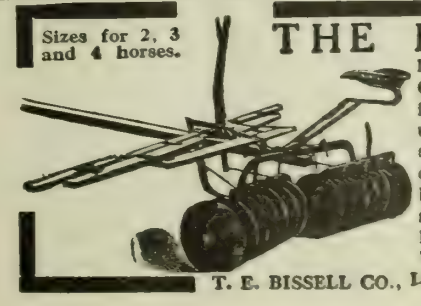
De Laval Dairy Supply Co., Ltd.,

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Seperators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Sizes for 2, 3 and 4 horses.



THE BISSELL DISK

has made a great record throughout all Canada. There are good reasons why this is so. Balanced Right—Does not hump up. Improved Plate—Cuts and turns soil over. Hitches well Back—Easy draught. This Disk has several imitators, but no equal. None genuine without the name "BISSELL." Test trials given on hard land with anything that cultivates. Write Dept. M for free Catalogue. 92

T. E. BISSELL CO., LIMITED, ELORA, ONT.

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body

—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for

Sore Throat
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Sore Lungs
Rheumatism and
all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

THE HORSE

Shoeing Malpractices.

Paring Down the Foot.—The unnecessary paring down and rasping of the foot is a reprehensible practice, much too common. The hoof should be interfered with as little as possible in fitting the shoe. It is without a doubt the principal cause of the various evils which result from improper shoeing. In cutting away and rasping the horn the object is to impart a symmetrical and attractive appearance to the foot, but a neat, elegant, and well-rounded look of the feet is no proof that the shoeing has been efficiently performed. In order to judge whether the work of shoeing has been properly done or not one should not if the wall of the hoof has been rasped, and pick up the foot and look at the sole to see whether this has been pared out or whether the frog is cut down at all.

Rasping the Wall

Rasping of the wall and paring of the sole are bad enough faults; slicing away any horn from the frog is a worse one. The rasping of the wall is objectionable because it robs the latter of much of its strength, weakens the horn, and tends to render it brittle. The strongest horn is found on the top, and if the surface is rasped away, weaker and softer horn is exposed, which is neither intended nor fitted for such exposure. None of the outermost portion can really be spared nor can it be removed with impunity. The surface of the crust or wall is covered by a kind of gelaninous film or layer (much the same as is the case with our finger-nails), which protects the horn from adverse external influences, such as the action of moisture and evaporation, and to preserve its toughness and resiliency. Rasping of course, entirely destroys this protective layer, to the great detriment of the crust. It is bad enough if the rasping is done lightly, with a view to suposed neatness, but it is much worse if, owing to the shoe being made unduly small, a really apreciable thickness of the wall has to be rasped in order to bring it to the level of the shoe. Often the shoes are made smaller and narrower than they ought to be with the object of making the hoofs look nice and small and adding to their neatness. Shoes made too small in a short time become more or less embedded in the crust at the qaurters and heels, the horn growing over their outside edge; when this is observed it is time to have the horse reshod, no matter how much wear is still left in the soes; and the farrier should be told this time to make them wider at the quarters and heels. The rasp may legitimately be used to aid in laying the clinches of the nails, and if slightly touched the crust when so used can scarcely be objected to. There is no need to pare the sole out, because the horn here flakes off of its own acocrd in proper time. Some little paring or rasping may have to be done to it just where it is contiguous to the wall in fitting the shoe, but it is quite a different thing from paring the sole all over. To remove a few loosened flakes with the drawing knife can, of course, do no harm.

Mutilating the Frog.

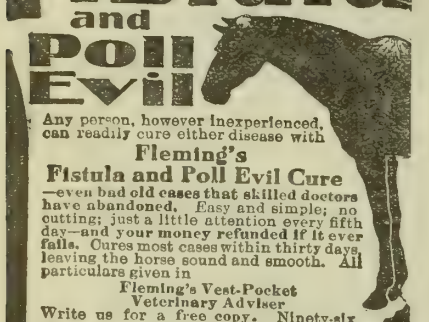
The soft horn of the frog seems to offer a rare attraction for the farrier's drawing knife. It slices away so nicely and easily, and can be cut down into such a symmetrical and pretty shape that the temptation to try to improve upon nature seems quite irresistible. But the frog is really intended for a more useful purpose than to serve as an object upon which to practice artistic skill. This pad of resilient horn is by nature intended to fulfil a highly important function, viz., that of breaking the force of concussion when the foot is placed on the ground, and of generally supporting and protecting the delicate internal structure in the rear portion of the foot. Hence it must be left intact, and on no account must it be pared down. The larger and more prominent it is the better, and it is eminently desirable that it should take a good bearing on the ground.—Fox.

False Quarter.

A false quarter may be defined as a fissure or depression in the wall of the hoof situated at the quarters, and caused by such destruction of the secreting structure that it is impossible to obtain a growth of healthy horn to fill up the interval.

It differs from sandcrack very materially in being much wider at its base, in generally containing a modified condition of horn, and in the coronary band showing a loss of substance corresponding to that in the crust. It is usually the result of tread or quittor, but any external injury sufficient to produce severe inflammation in the secreting substance, with consequent arrest of secretion, may cause it. As the secreting substance, once destroyed, cannot be restored, there is properly speaking, no "cure" for false quarter, and in old standing cases palliation by careful shoeing is all that can be hoped for. In early cases treatment, if there be a wound, takes the form of restricting the disease within the narrowest possible limits, by removing all ragged edges, making the wound as level as possible by bringing the edges together and inducing healing by secondary adhesion. The horse should be rested, because movement interferes with repair, and during work there is a greater liability for dirt and grit to get into the wound, which produces irritation and delays the healing process. If the case be an old one and the gap in the coronet is healed up and filled in with fibrous tissue,

Fistula and Poll Evil



Any person, however inexperienced, can readily cure either disease with

Fleming's Fistula and Poll Evil Cure

—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in

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Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is an

ANTISEPTIC AND GERMICIDE

[NON-POISONOUS]

Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.00 a bottle, delivered. Describe your case for special instructions and **Book 5 K free.**

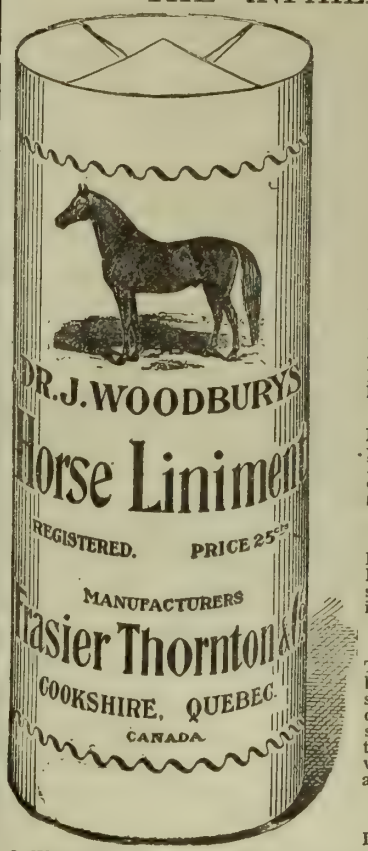
ABSORBINE, JR., antiseptic liniment for mankind reduces Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Concentrated—only a few drops required at an application. Price $1 per bottle at dealers or delivered.

W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada.

Dr. J. Woodbury's Horse Liniment

THE INFAILLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.

Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.

Yours truly, Clarke Bros.

Hubbard's Cove, N. S.

Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.

Yours truly, C. C. McLean.

Truro, N, S.

This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.

Newton Lee, Owner "All Right" 5817.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

ASIER THORNTON, &, CO., Limited, Manufacturers: Cookshire, Quebec, Canada.

Blood Thin and Weak Too Nervous to Sleep

Here is Another Case in Which Dr. Chase's Nerve Food Proved Its Great Reconstructive Influence.

Thin blood and exhausted nerves usually go together. A considerable portion of the blood is constantly consumed in keeping up the vitality of the nervous system. Once the blood is deficient, either in quantity or quality, the nerves suffer and bodily pains result. Headaches, neuralgic or sciatic pains are the indications in some cases, while in others weakness, nervousness, irritability and sleeplessness are the most marked symptoms.

Mrs. R. F. Catlin, Elm Springs, Sask., writes: "For years I was troubled with nervousness, and could not sleep nights. Also had lack of color as a result of the blood being thin and weak. My husband saw Dr. Chase's Nerve Food advertised, and got some for me, and wanted me to try it. I did so, and it has proven a wonderful help to me. By enriching the blood, it has restored color to my face and has built up the nervous system so that I rest and sleep well. It is a pleasure to recommend so excellent a medicine."

Dr. Chase's Nerve Food goes direct to the formation of pure, rich blood, and for this reason is the most certain means of increasing the quality as well as the quantity of blood in the human system. The feeble, wasted nerves are restored, and through the nervous system new vigor and energy is imparted to every organ and member of the body.

You will be surprised at the way this food cure puts new strength and vitality into the weakened body. And the best of it is that the benefits are both thorough and lasting. In this the Nerve Food differs from mere stimulating medicines which give rise to false hopes and when discontinued leave you as weak as before. Put this great restorative treatment to the test and prove its merits in your own cases. 50 cents a box, 6 for $2.50. All dealers or Edmanson, Bates & Co., Limited, Toronto.

If Your Horse Could Talk

He would tell you that he can do lots more work when the wagon wheels are greased with

MICA AXLE GREASE

Mica Axle Grease fills the pores of the axle. Makes a perfect bearing surface. Reduces friction to a minimum.

Dealers Everywhere

The Imperial Oil Company Limited
BRANCHES IN ALL CITIES

What Standardization Means to Motor Car Buyers

IT means VALUE. Just to the extent that a car is standardized does the buyer's dollar approach the maximum of purchasing power.

Standardization means definite, proved quality, known manufacturing costs and reduced selling costs.

Of the million autos that will be sold in 1916, 75% will be standardized cars selling for less than $1000.00 each. This remarkable American achievement is the direct result of standardization.

Finally the upholstery has been standardized by the almost universal adoption of

DU PONT FABRIKOID
REG U S PAT OFF

MOTOR QUALITY

40% of all 1915 cars sold were upholstered in this proved, guaranteed material and in 1916 the total will be at least 60%.

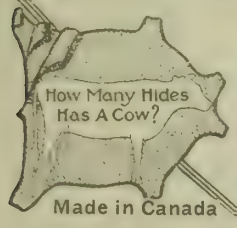
Fabrikoid is the only standardized automobile upholstery. It wears better than coated splits (commonly sold as "genuine leather") and has the artistic appearance and luxurious comfort of the best leather.

Rayntite Fabrikoid for tops, single or double texture, is guaranteed one year against leaking, but made to last the life of the car.

To get the most for your money, buy a standardized car

Du Pont Fabrikoid Co.

Toronto, Ont. Wilmington, Del.



Craftsman Fabrikoid, the artistic upholstery material for furniture and home decoration is sold by leading department stores.

Made in Canada

ADVERTISE IN THE MARITIME FARMER TO GET RESULTS.

little can be done except to prevent the insinuation of dirt or grit into the fissure, to relieve the part of weight bearing, and employ the animal at slow work. Over-exertion or violence may cause the fissure to open and occasion painful lameness. It is a good plan to fill the fissure with guttapercha to prevent dirt getting in, and, if suitable in other respects, to apply a bar shoe, so as to take the bearings off the weak part. In well-managed cases the spurious horn thrown out from the secreting laminae forms a sufficient protection for the sensitive parts immediately beneath, and the horse becomes workably sound. Great care must be taken not to injure or weaken the horn in the neighborhood of a falsequarter by rapsing when shoeing. When the crust is thick and qaurters are strong the perssure may be removed off the wall at the injured part by paring a little off the bottom of the crust at the part, so that it shall not touch the shoe, but if the foot is weak an indentation or hollow should be hammered out in the shoe.—Veteran.

Seedy Toe.

This powdery degeneration of the horn is apparently produced by anything interfering with healthy growth, and it is frequently a concomitant of bad or defective shoeing.

The first appearance is not that of of a cavity, such as we find in advanced cases, but a changed and softened horn, which may be dry and crumbly, or moist and cheesy; in both cases, however, lacking the toughness and cohesion of healthy horn. Seedy-toe is generally painless; it may exist for a considerable time without causing lameness, which, when it does occur, is caused by weight being thrown on the diseased portion of the wall. This lameness can usually be temporarily relieved by providing a shoe that does not press upon the diseased part. The presence of seedy-toe may, in advanced cases, be suspected when a portion of the wall appears either bulged or depressed, and gives out a hollow sound when tapped with a hammer, but to confirm the diagnosis the shoe must be removed. The "white line," the connecting link between the wall and the sole, is then seen to be replaced by a narrow slit, which, however, does not by any means indicate the extent of the disease, for the degeneration of horn may extend upward for several inches, and even reach to the coronet. The width of the diseased part may vary between a quarter inch and three inches.

As a rule, the space is a narrow one, but when all the diseased horn is cleared out the cavity is of considerable size. The usual thing after clearing out the diseased horn is to fill the civity with tar and tow, replace the shoe, and in doing so make provision that the wall bounding the cavity should be relived of all pressure. In view of the possibility of the disease being caused by an organism, it is recommended that after cleaning out the cavity it be dressed with pure carbolic acid before filling it with tar and tow. In advanced cases a bar shoe could be applied, and the nails omitted at the diseased parts. If the horse is to continue working it is of great importance that the diseased portion of the wall should be relieved of weight. It is necessary also to avoid raising the heels whereby throwing the weight forward may cause lameness; calkins and wedge heels should, therefore, be avoided. Considerable time is required for the cure of seedy-toe. In bad, neglected cases, where lameness persists and careful shoeing does not relieve it, there is nothing for it but to cut away all the detached wall and remove disintegrated horn, thoroughly disinfect the parts with carbolic acid, apply a bar shoe, smartly blister the coronet, and give a long rest until the foot has grownagain and is strong enough to bear the attachment of a shoe.

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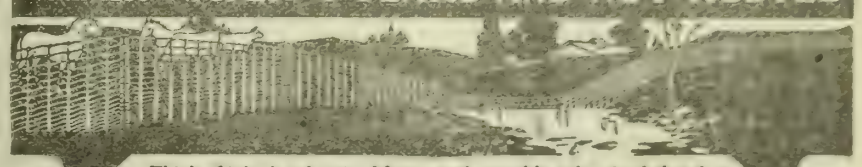
Handling the Colt.

Did you ever try to break a six-month-old colt to the halter? What hapened when you did it? Very probably there was a pulling match and if you were not careful, you were dragging around the box stall at the end of a rope. Then, if that colt did manage to get the best of you, there was more trouble ahead when breaking time arrived. The youngster had learned his strength, and was ready to try it again. Why not avoid this? Begin to break the colt when it is five or six days old if you want to save time and trouble. By the time a colt is a week old you can begin the first lesson in leading. Put on a halter of soft rope or webbing and you can soon teach the little fellow to lead beside his dam. Every time you take them to and from the pasture, use the halter on the colt and it will soon come to expect it. If you begin early, your colt is half broken before it ever sees a harness. Nor should the halter be the only thing the young colt should become acquainted with. Handle him frequently especially round the legs and feet; teach him that you intend no harm when you pick up one of his feet, or use a brush on his hind legs. One lesson with the colt is worth three with the grown horse. Treat him kindly, but never let him get the best of you. Here is a chance for you, boys. See how well you can train one of the colts your father is raising. Don't make it a spoiled pet, but a well trained colt.—"Hoard's Dairyman."

UNDER WATER 4 YEARS AND NOT RUSTED



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Gentlemen—I have handled your fence for four years and find it a good, strong and durable fence, and find that the galvanizing is first-class. In referring to this I have a fence that I put on four years ago across a gully, and the water is as high as the second wire and it is not rusted nor broken yet. I have a team of heavy horses that ran into the fence last summer and did not break or damage it in the least, and I am glad to say that in the four years I have handled your wire I have had no complaints about it.
Yours truly, DAVID CUMMINGS, Bowesville, Ont.

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is different—that it is made of Open Hearth Steel Wire. The Open Hearth process burns all the impurities out of the metal, thus removing one of the greatest causes of rust. The wire is then galvanized so thoroughly that it will not flake, chip or peel off. Every intersection of the wires in our farm and poultry fences is securely locked with our Peerless Lock. While the locks hold the wires securely together, these fences can be readily adjusted and perfectly stretched over uneven ground. It is easily erected and requires fewer posts than when used, fewer posts are required. Get the details. Send for free literature. It also describes our farm gates, poultry fencing and ornamental fence.

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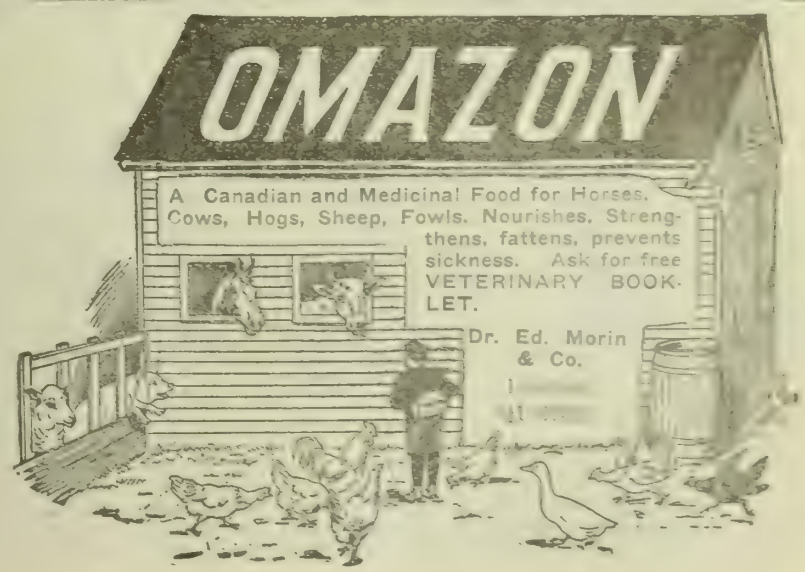

POULTRY

Improvement of Stock.

During the last few years great strides have been made so far as the quality of fowls is concerned, but a great deal more is required before the ideal is attained. To obtain an increased egg yield is the aim and object of every utility poultry keeper. To this end the first and foremost consideration is to improve existing stock. There are several ways of bringing about improvement in the quality of the ordinary farmyard stock, but it must be remembered that whatever system of improvement is to be carried out must be done in a considered manner, and be extended over sufficient time for results to justify its continuance. It frequently happens that if improvement be not immediately apparent some other method is started, which probablyl is entirely different with the result that the stock, instead of assuming a higher standard is in worse condition than would have been the case had no improvement been attempted.

The Favorite Method.

The favorite method of improvement is that of securing a male bird of the breed that it is eventually intended to keep, mating him with a number of selected hens or pullets. This plan appeals to most farmers, since it does not mean a general upheaval of the entire arrangements or cause much of a change in the method of management. It is usually found that the farmer is much more likely to improve his stock if some simple plan is laid before him, whereas when a drastic measure is recommended he thinks twice before he acts upon it, and generally he ends by continuing on the old lines.

System Required.

In the present time of strife and trouble, when an increased yield in eggs is so important, it behoves everyone interested in the poultry industry and the farmer especially, to improve his stock with this end in view. We find that the majority of farmers, even those who pay but small attention to poultry, secure new male birds each year, but they invariably choose a different breed, with the only possible result that the fowls retain their mongrel appearance. When new males of the same variety are introduced every year the members of the poultry yard rapidly assume the distinct characteristics, both in outward type and in economic qualities. Excellent as this method is it may be very considerably enhanced and the improvement more pronounced in a much shorter time, if greater care is exercised at the commeucement in selecting the hens or pullets that are to be mated with the first newly imported male bird. The hens are frequently chosen irrespective of breed, and they are different in every characteristic from the cock The result is that a much longer period is needed before improvement can be brought about. Especially does this apply to the newer varieties of poultry since in many of the later established varieties the type is not sufficiently fixed to have much influence over the progeny.

The Choice of the Hens.

This trouble may easily be obviated however, by selecting hens as nearly alike in build and character to the male as possible, and if this is done, even in the first year distinct improvement is noticed. The foregoing plan is very simple carried out, the only extra labor entailed being the erection of a small pen in some convenient place where the breeding stock can be kept. When all the eggs that are intended for sitting have been obtained, the occupants of the pen can be restored to freedom and allowed to return to their usual quarters. It will thus be seen that improvement in the existing stock may easily be secured and maintained at a very small outlay. Reliable birds can be readily obtained at a moderate cost from breeders who are conducting their operations on purely utility lines. Careful attention to the selection of the best individual layers from the flock year by year undoubtedly helps to establish a good laying strain, but all the advantage that accrues from breeding from hens known to possess remarkable laying powers is neutralised if the male is not also from a good laying source. The male possesses a much greater influence than is usually supposed over the egg producing powers of his progeny. It will thus be seen how important it is to secure a male bird from a good laying strain.

The Male Bird.

There are many poultry-keepers who delay the introduction of the male bird into the breeding pen too long to ensure early fertility in the eggs. It is well known that not for ten days or a fortnight afer mating, provided that teh hens are laying well and regularly can the eggs produced be relied upon to be fertile. When I say that the introduction is delayed too long, it is not meant to convey the idea that a longer period is required to ensure fertility but rather to indicate that the matings should take place much earlier in the season.

Signs of Ill-Health.

It is not at all uncommon that within a week or ten days after the male bird has been with his mates he goes completely off color. As a matter of fact he becomes so bad that the only course to adopt is his immediate removal from the hens. This leads to great delay and much inconvenience at the most important time in the poultry-keeper's year, because before a fresh cock can be secured, or the old one cured of his malady sufficiently to resume occupancy of the breeding pen, valuable time is wasted, time it is impossible to recover. The reason why a male bird should go so completely wrong after so short a time with the hens is difficult to account for. I have frequently seen a number of young cockerels looking in the very pink of condition, showing every indication of vigor and vitality, which when they have been sold and removed to another place, in a very short space of time have become ill and quite unfit for breeding purposes. It is more than possible that the set of changed conditions is responsible for this failure in a seemingly fit and strong cockerel such conditions as soil, feeding, water supply and management These may all have been entirely different from what the bird was accustomed to and hence the react on the system and this combined with the first strain of the breeding season, has the effect already mentioned.

The Value of Isolation.

This difficulty may very largely be combated by the simple device of isolation. That is to say, when the male has been purchased, keep him apart from his prospective mates until he has grown quite accustomed to his changed circumstances. A further advantage of isolation is that, should the bird have got cold on his journey or should he have any latent disease, the hens will be free from infection, since if there is no sign of disease after a fortnight, it may be fairly supposed that the bird is all right and in condition for his duties. It will thus be seen how necessary it is, first to purchase the male bird sufficiently early to allow of his isolation in order that he may become acclimatized and accustomed to his new quarters, and then thoroughly to test his quality and constitution before the time actually arrives for his services. In this case should anything go wrong with him, further arrangements may be made before the season is too far advanced unduly to delay the hatching operations.

The Kind to Choose.

The sort of bird to be used is also very important and yet, it is frequently neglected. I lately visited a farmer whose pens were completed at the time of my visit. I thought that the male in one of the breding pens looked some what strange, and upon drawing attention to it, was informed that it had been used for three years and he was considered quite good enough to be given another season's trial. Operations conducted on these lines must sooner or later end in disaster. There are such excellent facilities offered at the present time for gaining information on this and kindred matters that it is entirely the poultry-keeper's own fault if he fails to take full toll of the assistance offered.

Why Chicks Die in the Shell

There seems to be a wide and varied opinions as to why chicks die in the shell. Among the common causes are weak germs caused by close in-breeding, too close confinement and improper feeding. The writer is fully convinced after many careful demonstrations that while the above causes are partially true, the principle cause is improper ventilation. The chicks suffocate from insufficient air.

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remains practically the same from the beginning to the end of the hatch and while it may be just right at some stages of the hatch it certainly is not right all the way through. If the proper amount of air passes through at the beginning of the hatch, then as the chick grows it must have a greater amount, and if it is not forthcoming, suffocation follows.

The ventilation of many incubators is such as to cause a draft, drying the eggs too fast, causing the membrane to become tough, so much so that at hatching time the chick is unable to break through, and many die in the shell after piping. If this membrane is kept soft and brittle, as when fresh laid, the chick would easily pick its way out.—Archie E. Vandervort.

Correct Brooder Temperature.

The temperature of the brooder or the brooder house when the chicks are first transferred from the incubator should be practically as high as the temperature of the incubator from which the chicks have just been removed, or 95 to 100 degrees. This temperature should be maintained for the first week and never allowed to fall below 95 degrees.

The second week it should not be allowed to drop lower than 90 degrees. These temperatures refer to the air temperature taken on a level with the chicks. After the second week the temperature should be reduced gradually until the chicks are old enough and hardy enough to do without artificial heat. At no time should the chicks be uncomfortabe, either on account of too much cold or too much heat.

If they are too cold they will huddle together, those on the inside of the bunch will become too warm and will pass to the outside, where they become too cold again. Under these con ditions the chicks rapidly catch cold and die. On the other hand, it is almost as bad to have the temperature too high for in this case the vigor of the chicks will be educed and they will be unprofitable. The heat should radiate from above down on the chicken's backs.

Housing Geese.

Because geese are very hardy birds that is not sufficient excuse to neglect them so far as their housing arrangements are concerned. To achieve good results a comfortable shed should be provided for their accommodation. The house should be about 4 ft. high, and made of fairly thick boarding. If the timber is very thin the interior becomes too cold during the winter and and too hot druing the summer. The earth makes the best floor, as wood, cement, and bricks are all unsuitable and liable to lead to leg weakness. I have always found it a good plan to use a shed entirely, or almost, open in the front. If the house can be placed in a sheltered position no shutter is necassary, but if out in the open, exposed to the wind and rain, it is advisable to have one which can be opened or closed at the top so that during a driving rain it can remain partly open, yet at the same time afford protection. An abundant supply of fresh air is necessary, without which ill-health will make itself apparent among the birds. No overcrowding should be allowed, and as far as possible about 6 square feet of floor space should be given to each bird; that is, a house 6 ft. by 8 ft. accommodates eight adults.—Expert.

Cooling Eggs While Hatching.

A very common mistake in artificial incubation is made with regard to the daily cooling of the eggs. It is seldom that operators allow sufficient time for this, which can only be accounted for by the fact that it is usually believed to be harmful. It must be remembered that an egg takes a long time to lose its heat, and therefore if only time to cool for a few minutes it has very little effect. Again, the length of time given must depend on the temperature of the room, for the eggs lose their heat more rapidly in a cold room than in a warm one. Taking the average temperature of 60 degs., the eggs should be cooled for twenty minutes in the morning and fifteen in the evening. The difference in length is suggested, for usually a longer time elapses between the night and moning cooling than between the morning and evening. If the temperature in th eroom is only 50 degs., then fifteen minutes in the morning and twelve minutes in the evening is suffieient; if the room is only 40 degs., then twelve minutes and ten minutes is ample. If, on the contrary, the room is 70 degs., twenty-five minutes should be allowed in the morning and twenty minutes at night, while if it be 80 degs., then thirty-five minutes and thirty minutes respectively should be allowed.—Expert.

Shipping Eggs for Hatching.

I pack in baskets, first putting excelsior in the bottom and all around the sides. Wrap each egg in paper, packed tight so they can't shake. Be sure to but plenty of excelsior on top, stand it on end and then put the excelsior around the eggs so they will not strike each other. They must be then sew a cloth over them and they are ready to ship.—(Mrs. J. E. Bundy.)

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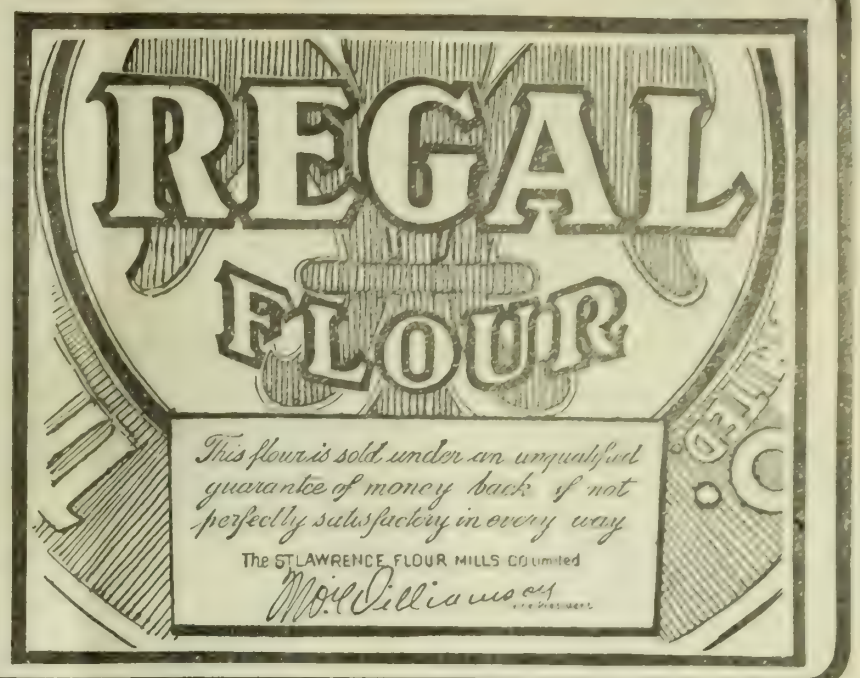
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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Two on a Rancho.

(Continued from Last Issue).

IV.

It was a very quiet ceremony the next morning, with only a doctor and one of the nurses as witnesses. Immediately afterward they crossed to Jaurez and boarded the train. Miguel, whose sly smile at sight of the senor's companion had frozen on his lips at the words "My wife," was in charge of a much excited and very clean canine, which had been but a street pariah the day before.

Several times armed parties halted them, but Miguel's voluble explanations, and a look of comprehension into the pale faces of the two, was always satisfactory, though Barlow fumed fiercely at every softened glance flung his way. Miguel proved a capital dragoman, pointing out what spots there were of interest in the flat, drab landscape, telling tales of the hill country, of jaguars, and of the droves of relentless javelin hogs, that never leave their prey until a kill is made.

He also told of the ceaseless warfare and brigandage that was laying waste his land—tales of violence and valor, with himself much to the forefront. At Jaurez, Miguel had been an ardent insurrecto; but as they dropped farther and farther south, over the hastily relaid rails and propped up bridges, he grew quite scornful of the ragged patriots and their war cry of 'Libertad!" By the time he reached the first outpost of the federal army he was leaning far out of the window, cheering for the government.

It was mid-afternoon when they reached Rio Vuelta, a metropolis of three thatch-roofed adobe houses set in a jungle of giant cactus and beargrass. From some invisible place Miguel procured a hack drawn by two little gray mules, and they set off to the west straight toward the descending sun.

Ahead loomed rolling hills, and beyond were the snowy peaks of the sierras, which soon blotted out the cruel, swordlike rays of the tropic sun. As it became rapidly cooler, their jaded eyes brightened, and they talked with animation of the things they saw and passed—the mourning doves in the manzanita bushes, the chaparral chickens that darted across the road, and the jack rabbits that danced ahead like fairy sprites. The dog became very much interested in these last, and it was all they could do to keep him in the hack.

The moon followed on the footsteps of the first stars, an orange ball that soon whitened to silver as it rose higher and higher through the clear seas of the night sky. With its coming, they became subdued, and soon fell into a silence that lasted the rest of the drive. Even Miguel seemed depressed; and when the low, white building loomed up ahead, his introduction was but a muttered—

"La hacienda!"

Then they rattled down the slope of a deep aroyo, and splashed into a shallow ford, where the mules halted and drank noisily. Here, in the deep blotch of shadow, and under the weight of the night's silence, it was uncanny. They leaned close together, as if from a simultaneous presentiment.

From the rocks above them rose a thin, eery wail, an almost childlike whimper. The dog growled, and the fur stood up on his neck. The little mules, after one moment of strained listening, dashed forward and swept them up the hill to the gate of the hacienda.

There blazed a welcome light, and the fat, genial face of Anna, Miguel's wife, smiled a welcome. The grip of terror that held them relaxed into sheepish laughs.

"What was it, Miguel?" asked Barlow.

The Mexican shrugged his shoulders.

"Dat jaguar. He beeg tief; steal pig, calf, horuse—sometimes, when he hongry, man. I am no scared."

In his room across the patio Barlow heard his bride and Anna talking together—low, inaudible, feminine murmurs. Somehow the sound was very soothing, and he was asleep before he had time to review the happenings of the momentuous day.

V

It was very late when they met under the bean-vines in the patio the next morning, and were joyously welcomed by a furry whirlwind of happiness.

"Oh, senor, senora!" cried Miguel, appearing with the fresh goats' milk and rolls, "Dat dog! He have chased de jack-rabbit until I t'ink he die. He much like de rancho, si?"

"I know he likes it," whispered Jane, with a dim glow in her eyes that made Barlow inwardly uneasy. "I wish he was a little dog—just a little puppy-dog. It would be sweet to see him grow!"

"Which reminds me that you want a garden," replied her husband. "I'll go and consult with Miguel"; and he fled ingloriously from the dim glow in the eyes of a mere woman.

His request humbled the omniscient, accommodating Mexican to despair.

"A garden, senor? There never have been a garden here. Eet is too hot, too much sun, and there is too small rain. Look, not even grass, senor."

Barlow's eyes followed the brown finger pointing to the bare, baked slope rolling higher and higher behind them, like the crest of a wave. Against the drab outline there was no green except the green of the cactus, which waters itself, so Mexicans say.

As Barlow looked, his face darkened. It was impossible that they should have to be disappointed in their wish for a garden. He had promised it her; and though he considered the request more or less silly, he believed in keeping his promises. For a long time he was silent, gazing at the steely frame of the morning heat about the distant shimmering peaks of snow.

"No water!" he pondered, and then turned and pointed down into the arroyo. "But there is running water there. Where did it come from?"

Miguel was hazy. He shrugged his shoulders; spread out his hands toward the whoel sierras, and rolled a cigarette complacently. It did not matter, yes? No one bothered to find out where water came from, so long as it was there. It was cold water; it came from the melting snows. That was as far as his knowledge went; but even that small bit gave his master an idea.

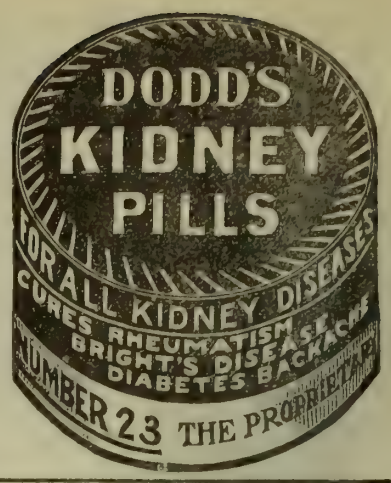
"Hitch up the hack," commanded Barlow.

All morning the horses toiled over the hills above the hacienda, while Barlow, squinting in the blazing glare, searched every slope, every ravine, oblivious to the passing them. In his heart was the joy of the worker.

Finally, when hope had begun to pale they drove up a rising trail to a flat plateau, a rampart of the high

A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness, constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by this method. Write today. Address: Mrs. M. Summers, Box 309, Windsor, Ont.



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Albert Lea, Minn.—"For about a year I had sharp pains across my back and hips and was hardly able to move around the house. My head would ache and I was dizzy and had no appetite. After taking Lydia E. Pinkham's Vegetable Compound and Liver Pills, I am feeling stronger than for years. I have a little boy eight months old and am doing my work all alone. I would not be without your remedies in the house as there are none like them."—Mrs. F. E. Yost, 611 Water St., Albert Lea, Minn.

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Pittsburg, Penn.—"Your medicine has helped me wonderfully. When I was a girl 18 years old I was always sickly and delicate and suffered from irregularities. Three doctors gave me up and said I would go into consumption. I took Lydia E. Pinkham's Vegetable Compound and with the third bottle began to feel better. I soon became regular and I got strong and shortly after I was married. Now I have two nice stout healthy children and am able to work hard every day."—Mrs. Clementina Duerring, 34 Gardner St., Troy Hill, Pittsburg, Penn.

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Caused by so many enlisting for military service, have caused a great demand for well qualified young men and women.

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Catalogues to any address.

THE ST. JOHN Business COLLEGE
S. KERR Principal

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited

RIDER AGENTS WANTED
In every locality to ride and exhibit a 1916 Hyslop Bicycle with latest improvements.

10 DAYS' FREE TRIAL
Every Hyslop Bicycle is sold with the understanding that if owner is not satisfied after using bicycle 10 days it can be returned and money will be promptly refunded.

DO NOT BUY *a Bicycle, Sundries, Tires or Sporting Goods* until you receive our latest literature and special money saving proposition.

TWO CENTS is all it will cost to send us a postal and we will mail Free, postpaid, a handsome Art Folder showing our complete line of Bicycles in large size actual colors; also Catalogue of Sundries, Tires and Sporting Goods. Do not wait. *Write to-day.*

HYSLOP BROTHERS, Limited
Dept. 30 Toronto, Ontario

sierra; and lo, there gamboled and sang a sturdy stream of limpid water, which ran along the centre of the plateau and then plunged off down a steep slope that fell away toward the south.

"Our garden, Miguel!" he cried.

Getting down, he paced here and there, like a hound on a scent, testing the stream's depth and strength of flow, and finally judging with an expert's eye, the levels to the hacienda shimmering in the heat below them. When he looked up, it was with a radiant face.

"In a month, Miguel, that water will flow into the back yard of the hcaienda!"

Miguel had shrugged his shoulders in pagan doubt, but Barlow's prediction came true. Aggrandized by his self-importance, the Mexican had scoured the country and gathered a small army of half-starved peons, whom he ruled with a sway imperial. There was really little to be done, for nature proved exceptionally kind, and it was only necessary to divert the stream for some hundred yards into a dry ravine that led almost directly to the hacienda.

It was a happy, busy, glorious month for Gordon and Jane, not to mention the dog. When they weren't out watching and directing the workers, Barlow was busy with his scale of levels, computing water-heads, and drawing intricate drainage maps, while his wife pored for hours over alluring seed catalogues.

Then came the wonderful day when the water was diverted into its new channel. As if trained, it swept down into the garden laterals and over the slope below, to join the other stream in the bottom of the arroyo. It splashed gaily into the bathtub that had been sent from El Paso, and gushed forth from a faucet in the kitchen, much to the amazement of Anna, who crossed herself devoutly at this evidence of the Lord's power and goodness.

Before the laborers left, they were invited to bring in their families, and a dance was held on the cleared floor of the barn. There were laungter and song and the syncopated melody of mandolins late itno the night.

Jane, her eyes shining and cheeks flushed, looked on from the patio in a very ecstacy.

"Isn't it beautiful!" she whispered half aloud. "All of it! This is heaven!"

He laughed shortly, his sick soul still unable to brook enthusiasm.

"If this isn't heaven, we'll know what is, soon enough."

Then they were silent, for a cloud had drifted across the face of the moon.

VI

If thre was a cloud over their hearts, it soon lifted before the enthralling task of laying out the garden and planting the seeds. Side by side they worked, refusing to let any hands but theirs do the planting. Jane murmurer over every little seed, a soft little croon in her voice, while Barlow's efforts were largely devoted to restraining the dog, who seemed to regard it all as a mammoth burying of bones, and was naturally inquisitive.

When Christmas came, the garden was in full bearing. It was a new Christmas to them—a bright, warm day, clear as a jewel, and alluring as a gipsy with a rose in her mouth. Miguel had climbed fifteen miles into the mountains for a ragged little pine, which they bedecked for the children nearest the hacienda; and there was a special limb for the dog.

When the happy children had gone, and the Maker's glowing pencil had dotted in the star-periods, they sang all the old carols they could think of; and when the last was finished they fell silent. It had been a pleasant day, but somehow memories are always the sweetest.

When she turned to him, her lashes were wet.

(Continued on Page 396).

You can't beat
Old Dutch
for taking rust and stains off knives

So Good for Children

Millions of pounds of delicious "Crown Brand" Corn Syrup are sold every year to mothers, just for the children.

EDWARDSBURG
"Crown Brand" CORN SYRUP

Mothers know it is practically all nourishment. They know it is a food—that Bread spread with "Crown Brand" makes a well balanced food that sustains and builds up the strength.

Mothers know, too, that "Crown Brand" is the *most economical "sweetening"* for all sorts of Cakes, Pies, Puddings and Sauces—and is the whole thing for delicious homemade Candies.

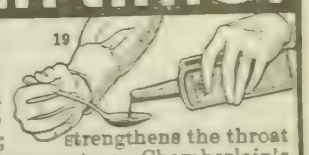
"LILY WHITE" is our pure white Corn Syrup—not so pronounced in flavor as "Crown Brand"—equally choice for the table and for candy making.

ASK YOUR GROCER—IN 2, 5, 10 AND 20 POUND TINS.

7

The Canada Starch Co., Limited, Montreal

Take a dose in time!



Don't let your system become lowered by the attacks of a cough or cold. "Safety First"—take a dose of Chamberlain's Cough Remedy at once. It loosens the Cough so that it soon disappears; it heals the soreness; strengthens the throat and lungs so they are unaffected by changes of temperature. Chamberlain's contains no narcotics or harmful drugs. While it gives relief from the first dose it may be safely used with the youngest. All druggists 25c. & 50c.

19

CHAMBERLAIN'S COUGH REMEDY

Mention the Farmer when Answering ads

HONESTLY BELIEVED

HE WAS GOING INTO

CONSUMPTION.

DR. WOOD'S
Norway Pine Syrup
CURED HIM.

Mr. Frank E. Anthony, 69 Ellen Street, Winnipeg, Man., writes: "Having taken several bottles of Dr. Wood's Norway Pine Syrup, during the past few weeks, to relieve a chronic cough and general throat trouble, allow me to express my unbounded satisfaction and thanks as to its sterling qualities. A short time ago I became suddenly subject to violent coughing fits at night, and directly after rising in the morning, for about an hour, and found I was gradually losing weight. All my friends cheerfully informed me that I looked as though I were going in consumption, and I honestly believed such was the case. However, after having taken several bottles of 'Dr. Wood's' I am pleased to relate that the cough has entirely disappeared, along with all the nasty symptoms, and I have since regained the lost weight. I have no hesitation in recommending Dr. Wood's Norway Pine Syrup as a sure cure for all those troubled in a like manner."

When you ask for "Dr. Wood's" see that you get what you ask for. It is put up in a yellow wrapper; three pine trees the trade mark; the price, 25c and 50c.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

First Aid for Cuts.

In reply to a letter from Mrs. S. B., asking for some information on what to do first in the case of a member of a family cutting himself or herself badly before a doctor can be reached, I may say :

The first consideration, of course, is to prevent excessive bleeding. A moderate amount of bleeding is an excellent thing, and permits washing out of the wound. The second consideration is the condition of the instrument with which the wound was made, namely, whether it was clean or dirty and the condition of the skin or clothing through which the instrument may have passed in making the cut. The third consideration will be the nature of the cut itself, i. e., a free, open wound, or a narrow puncture. Provided a doctor is available within a reasonably short time, say a few hours my own advice would be to first have fairly free bleeding, then stop the bleeding (by pressure and raising the part above the rest of the body), and leave the wound until the doctor comes in most cases.

If the wound is made by a very dirty instrument, or has accidentally received a great dose of dirt of some kind, especially soil, manured soil in particular, or manure itself, then I would turn a tap on it or otherwise wash it under a flowing current of water very thoroughly indeed. If these two matters are attended to, I think that in the most cases it will be quite safe to wait until the doctor comes. If the wounds are punctured, promote free bleeding and hurry the doctor, since it may often be necessary to give tetanus antitoxin, to cauterize, or to lay the whole wound widely open, perhaps all three.

For minor wounds, when a physician is not ordinarily called in, the same principles apply. Permit free bleeding for a time, then stop the bleeding and close the wound by gently pressure until the edges stick. Then the ideal treatment after that is simply to keep the part from any injury which would break the seal and let the wound open.

I certainly would not use coal oil or any other substance for a wound which a doctor was going to see, nor would I use them on wounds that the doctor is not going to see. Any wound which requires disinfection should be disinfected by the physician and household measures of this kind are not advisable at all. In cases of doubt, watery solutions of bichloride of mercury,one in a 1,000, cannot be improved upon. Carbolic acid in many people produces blisters and burns. It must always be remembered that bichloride is a deadly poison in tablet form, and even in liquid solutions of one in a 1,000, so that every precaution must be taken to see that children do not eat the tablets or drink the solution.

When it is necessary to protect a sealed wound of a trivial nature, for which a physician has not been called, do not put a handkerchief or some other exceedingly dirty piece of cloth upon it, and whatever cloth is used, do not tie it tightly. The best covering for such a wound is no covering at all, but most people, especially children, require something to remind them not to knock the injured finger, and a loose, large bandage, which will cover the finger in a bunchy way and make them guard against knocking it, is good principally to call their attention to the fact that they are to watch the finger. Avoid rubber finger stalls, court-plaster and things of that kind absolutely. Even collodion is not a good dressing for a cut unless it has been thoroughly treated by a physician.—H. W. Hill, Director of Public Health, London, Ont., in Farmers' Advocate.

Are Worth Their Weight in Gold

WHAT MRS. BROWN SAYS OF DODD'S KIDNEY PILLS

New Brunswick Lady Feels It Her Duty to Tell Women That Dodd's Kidney Pills Are the Best Remedy She Ever Used.

Miscou Harbor, Gloucester Co., N. B., March 2.7—(Special.)—"I think Dodd's Kidney Pills are worth their weight in gold." This is the statement of Mrs. James Brown, well known and highly respected here.

"I think it would be ungrateful on my part if I did not tell what a blessing Dodd's Kidney Pills have been to me," Mrs. Brown continued. "I was in bed three weeks with headache and sore back. Then I began to use Dodd's Kidney Pills and I found them the best remedy I have ever used."

Mrs. Brown is just one of the many women in New Brunswick who are telling of pains relieved and health restored by the great Canadian kidney remedy. Dodd's Kidney Pills are suffering women's best friend, because they act directly on the kidneys. They tone up the kidneys and put them in condition to do their full work of straining all the impurities out of the blood. Nine-tenths of women's troubles come from diseases or disordered kidneys. There is abundant evidence on every hand that Dodd's Kidney Pills cure all Kidney troubles.

The Teeth.

Inasmuch as the importance of general hygiene is rapidly growing in public recognition, and as hygiene of the mouth in particular is developing into one of the most important branches, it has been deemed desirable to present the subject of dentistry in relation to its effect upon the employe.

There is no single factor that so impoverishes a community as disease, and there is no single portal that is so predisposed to disease as the mouth. The presence of decayed teeth means improper mastication of food—consequently indigestion with resultant malnutrition and anaemia. Unclean mouths and decayed teeth act as the breeding places for many forms of pathogenic bacteria and the liability to contract contagions diseases is thus greatly increased. Local pain and discomfort, with many other abnormal physical symptoms and conditions can often be traced directly to this source.

The practical result of this condition upon the efficiency of the employe is worth considering. There is a decided loss of time due to local pain and discomfort, and to disease which originates in neglect of the mouth and the teeth. The constant swallowing of pus from abscesses and old roots with fistulas is not only a most potent and prevalent cause of stomach trouble, but the catarrh set up is not only irritant and actually infective but may lead in time to other more permanent effects, namely, drying up of glands, chronic stomach diseases, and in some cases to ulceration.

The matter is important not only in relation to indigestion, but t othe whole

Give me a chance to PROVE my flour

I WANT folks to know what a splendid flour Cream of the West is. I want you to buy a bag at your grocery store. Use it for a couple of bakings and see the result.

Cream of the West Flour

the hard wheat flour guaranteed for bread

With Cream of the West you will have success or your money back. Your bread will do you credit or you don't pay one cent for the flour. Send back what you have left in the bag and your money will be refunded in full.

A strong, nutritious, light-rising, guaranteed flour, unbeatable for bread. That's Cream of the West. Try it.

Queen City Flour. This is a blend of Ontario and Western wheat. It is a splendid all-round flour for all bread and pastry purposes.

Monarch Pastry Flour is milled from Ontario soft wheat exclusively for pastry purposes. As good for pastry as Cream of the West is for bread.

Farmers' Clubs are invited to write us for quotations on flour, cereals and feed. We are supplying many such clubs satisfactorily.

The Campbell Flour Mills Co., Ltd.

(West) TORONTO, CANADA

group of infections, local and general, caused by pus organisms such as tonsolitis, glandular swellings, middle ear disease, maxillary abscesses, inflammation of the brain, meningitis, kidney inflammation, nephritis, inflammation of membranes of the joints, rheumatism, etc. Authorities are beginning to believe that rheumatism is due to a chronic infection in some part of the body.

The important fact to be recognized is that one and all of the varions conditions are poisonous in their nature. The cause underlying them is mouth poisoning of the marked character and is particularly virulent, for it is connected with decaying and diseased teeth. Pathological experiments have proved that no pus organisms are so virulent as those grown in dead bone.

It is urgent in the interest of many sufferers that some steps be taken to prevent prevailing conditions of the mouth. It may not be possible to prevent access of the organisms to the mouth any more than we can prevent their adhering to the skin, but the mouth should not be allowed to become a perfect hot bed of disease.

Dr. Atkins, of the British Dental Association has well said: "The health of the nation would be vastly improved, were some wholesale provision made for dealing with the teeth of the poor for there is a much closer connection than most people suspect between decayed teeth and disease."

Dental work and instruction in the care of the teeth offers those who receive it, the one thing necessary to make them appreciate its importance. When we consider that the mouth is the very gateway to the body and the teeth the machinery which must prepare the foods for the system's nourishment, and that upon one's bodily resistance to the attacks of disease depends his healthful condition, we can begin to realize that no force is so vital as that of the teeth and proper mastication.

Oral prophylaxis, preventive care of the mouth, consists of a thorough scaling of the teeth, the removal of accumulated decomposing food and matter between and around the teeth, cleansing and purifying every space and surface in the oral cavity. Treatments when given regularly, at appointed times, will destroy all plague-forming micro-organisms (which cause decay of the teeth) changing a disease-producing environment to one where disease and caries cannot thrive.

Health.

Licking postage stamps.—Licking a postage stamp may be the first step towards a tuberculosis camp, and chewing a pencil that somebody else may have used, bear all the possibilities of an early funeral for the chewer. These are conclusions to be drawn from a recent address by Dr. Samuel G. Dixon, State Health Commissioner of Pennsylvania. Millions of people moisten postage stamps with their tongues every day. These may have been shoved across a soiled counter or torn off with dirty hands an instant before, but, unfortunately, a habit, plus convenience, leads the majority of people to the custom of affixing them in this manner. In view of the fact that there are thousands of sufferers from tuberculosis and other diseases, these seemingly insignificant acts are always fraught with danger.

Dr. Olsen on Tobacco.— Writing in "Good Health", Dr. Olsen says: "At the present time the yearly consumption of tobacco amounts to about one hundred million pounds, or something like two pounds per head. The total cost of this large amount of tobacco is £30,000,000 in round numbers, which would be sufficient to build and equip ten Dreadnoughts yearly." Dr. Olsen says tobacco is a poison and its influence on the human body is always poisonous, the effect differing only in proportion to the amount taken and the susceptibility of the user. No one, he says, can honestly claim that the habitual use of tobacco in any quantity, small or large, benefits health, increases strength, prolongs life, or in any other way exerts a healing influence upon the human body.

The Wash Rag.—Frequently the same washrag is used by the entire family, thus affording an easy means of transmitting infection. In many households each individual has his own wash-cloth and his individual towel, but these hang so close to one another that there is ready interchange of the bacteria. Each individual should have his own wash-cloth. It should be thoroughly washed out with clean hot water after use. It should be then wrung as nearly dry as possible, and, if possible, hung in the sun to dry. It should not come in contact with other wash-rags. Colds and otherf chest troubles often spread through a family, because the one towel is common property.

Eat an apple.—"Eat an apple a day" is the advice given by Mr. O. H. Benson, a federal apple expert. "Apples are one of the most healthful foods obtainable," declares Mr. Benson. "Instead of taking patent medicines, eat apples. That advice followed would save thousands of dollars in doctor's and dentists' bills. "One physician I knew, says Miss Susan Walker, of the Harper Hospital, Detroit, "urged his two children to eat two apples each two hours after breakfast. They are rosy, plump, splendidly robust youngsters and the father lays the credit at the door of the apples. Apples give the need bulk to the food. If the skins can be digested, even they are good, for they increase the bulk necessary for proper food assimilation and health. The individual should study his or her idiosyncrasies, discover just the proper time to eat the fruit and the quantity to take, and then—'eat apples.'"

For Delicate Children

By Powerful Nutrients, Hypophosphites, Nerve Restoratives, Valuable Stomachics.

OF NERVOUS TENDENCY GIVE DR. CASSELL'S TABLETS.

Strengthen, Build up, and Nourish the Children, and you are conferring incalculable benefits on the country. You are also ensuring the physical well-being and success of future breadwinners and mothers.

Dr. Cassell's Tablets, whose success in Canada has been both immediate and striking, owes its popularity in great part to its safety and unquestionable medicinal activity. It is now doing more for the little ones of three continents than many mothers realise.

A powerfully nutritive food-medicine which can be given to the youngest infant, Dr. Cassell's Tablets feed the entire system, vitalise the nerves, and create healthy flesh, blood, and muscle in a manner truly remarkable.

They are the recognised modern home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, who will see that you get them. One tube 50 cents, six tubes for the price of five. War Tax, 2 cents per tube extra.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

Dr. Cassell's Tablets

GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

Britain's Greatest Remedy

TRADE MARK

Ploughs—Wilkinson

REGISTERED

U.S.S. Soft Centre Steel Moldboards, highly tempered and guaranteed to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plough is fitted especially with its own pair of handles—rock elm, long and heavy and thoroughly braced. The long body makes it a very steady running plough. Shares of all widths—specials for stony or clay land. The plough shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for catalogue.

The Bateman-Wilkinson Co., Limited
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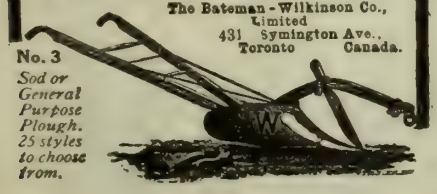

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Sod or General Purpose Plough. 25 styles to choose from.

— GOOD DIGESTION —

When your digestion is faulty, weakness and pain are certain and disease is invited.

Mother Seigel's Syrup corrects and stimulates the digestive organs, and banishes the many ailments which arise from indigestion.

FOR 40 YEARS THE STANDARD REMEDY

MOTHER SEIGEL'S SYRUP

FOR STOMACH AND LIVER TROUBLE

7015

At all Druggists, or direct on receipt of price, 50c. and $1.00. The large bottle contains three times as much as the smaller. A. J. White & Co. Limited, Craig Street West Montreal.

Was Not Much of a Believer in Patent Medicines

But Milburn's Heart and Nerve Pills Are All Right.

Mrs. Wm. McElwain, Temperance Vale, N.B., writes: "I am not much of a believer in medicines, but I must say Milburn's Heart and Nerve Pills are all right. Some years ago I was troubled with smothering spells. In the night I would waken up with my breath all gone and think I never would get it back. I was telling a friend of my trouble, and he advised me to try Milburn's Heart and Nerve Pills. He gave me a box, and I had only taken a few of them when I could sleep all night without any trouble. I did not finish the box until some years after when I felt my trouble coming back, so I took the rest of them and they cured me."

Milburn's Heart and Nerve Pills have been on the market for the past twenty-five years. The testimony of the users should be enough to convince you that what we claim for them is true. H. and N. Pills are 50c per box, 3 boxes for $1.25; at all druggists or dealers, mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

We have been using MINARD'S LINIMENT in our home for a number of years and use no other Liniment but MINARD'S, and we can recommend it highly for sprains, bruises, pains or tightness of the chest, soreness of the throat, headache or anything of that sort. We will not be without it one single day, for we get a new bottle before the other is all used. I can recommend it highly to anyone.

JOHN WALKFIELD,
La Have Islands, Lunenburg Co., N.S.

Who is Your Competitor?

You have 1,000 competitors for a $6.00 job, 500 for a $9.00 job, 50 for a $10.00 job, 10 for a $20.00 job, 5 for a $25.00 job, and no competitors for a $50.00 job. In which class do you wish to qualify? If you wish to weed out competitors and have the field to yourself, study a few months; it is an easy matter.

Start now at the

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Moncton, N. B.
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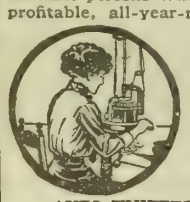
Do you want to earn $10 a week or more in your own home?

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.



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America's Pioneer Dog Remedies

BOOK ON
DOG DISEASES
And How to Feed
Mailed free to any address by the Author
H. CLAY GLOVER, V. S.
118 West 31st Street, New York

Two on a Rancho

(Continued from Page 393).

"I'm such a fool; but the old songs always make me sad," she said. "Why, I don't know, for I have nothing to regret. I am far happier now than I've ever been in my life."

Then he, too, came out of the past with a shrug, for he was honest enough to admit to himself that the day had brought him much.

"It isn't half bad here, is it? I never thought I could stand living away from where things were being done. But I suppose it is because I realize now that it doesn't make any difference."

His bitterness had to crop out, but he was immediately ashamed of it, and glanced at her contritely. She was smiling at him, but it wasn't the smile which made him stare. There was about her something intangible, subtle, disturbingly sphinxlike. It hinted a secret that he could not guess. He was still pondering it when he fell to sleep that night.

He was fated to be troubled by it many times thereafter. When the reaction came from his interest in the maps that he was making of the whole district, with a view to irrigation, and the bitter realization of the hopelessness of all his efforts welled up in him, he would start up with a groan and pace the floor, biting his lips, after his habit.

"Just think of all I could do, could do; just think! Look at all that land! It could be bought for a song and developed into one of the greatest irrigated projects in the Southwest. The supply of water is inexhaustible!"

He would glare at her as if she were to blame for it all, only to find the strange smile on hr lips, the almost mocking smile which he was too proud to ask her to explain. Angrily he would go off on long climbs, until the exertion stifled the heat within him.

She, too, found much to occupy her while he was thus finding respite from himself. Flowers followed flowers the whole winter through in that wonder country, and her interest in the tiny growing things never seemed to abate.

Very capable she looked, striding here and there in her short skirts. Her sleeves were rolled high on her well-browned arms, and about her hips was the holster carrying the little pistol which he had given her, and with which constant practise had made her surprisingly proficient. They were very busy, those two, and very happy, for he, at least, had forgotten the days.

Winter melted into spring—a change almost unrecognizable, and only marked by the red and yellow glories of the cactus and the northward passage of the birds. First came the geese, plaintive, disembodied cries high in the night, stirring Barlow strangely with vague desires of unrest. Yet it was not the wander call; he did not want to leave the rancho, for it had become too much a part of him, of all the dreams that he had planned. He found himself watching Jane; and when he caught the glow in her eyes, as she tended her little growing things, the unrest was stronger to him than ever.

Ducks followed the geese, black lines swerving through the mists of dawn like the ghostly arms of witches caught by the day. The sand-hill cranes, huge and harsh-voiced, were followed by the plovers, the bull-bats and the killdees. Everywhere there was a feeling of movement, of change. Barlow had sudden moments of action and sudden moments of lassitude; not the old bodily weariness, but a warm, lethargic deliciousness.

He lay awake at nights in a half-dreamy stupor; but when he would hear Jane stir in her room across the patio, he would lift himself on his elbow and listen breathlessly, conscious of the quickened pulse-beat. The undercurrent of bitterness in his heart rarely welled up any more. He had forgotten the passage of the days!

Sample List of Bargains in Organs and Pianos

This is just a few of our Bargains—just to give you an idea of the snaps we are offering on easy terms. We have many, many more and all in first class condition—guaranteed. Mail coupon today filling in the kind of instrument you like. We will mail you a big list to choose from—giving full description, price and terms.

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HEINTZMAN & CO., Limited,

FIVE SPECIAL ORGAN BARGAINS

BELL five octave organ, oil finished walnut case, semi high top with music rack, 7 stops including Diapason, Melodia, Forte, etc. Grand organ and knee swell. A very sweet toned little organ in perfect condition and a snap at.....$23

DOMINION five octave organ, walnut case, flat top, has extension gables, nicely paneled in Burl walnut, 10 stops including Coupler, Vox Humana, Viola, etc. Grand organ and knee swell. A well known make with an elegant tone and a snap at.....$40

GODERICH, six octave organ, handsome dark mahogany case, semi-high top with mirror, sliding fallboard, 11 stops, including Bass and Treble Couplers, Vox Humana, Forte, Melodia, etc. Grand organ and knee swell. This is practically a new organ, the tone is very rich and is a splendid bargain at.....$55

BELL, six octave walnut piano cased organ, rail top with mirror, sliding fallboard, lamp stands, 3 plain panels in top door, 11 stops including Forte, Bass and Treble Couplers, Vox Humana, Diapaosn, etc. Grand organ and knee swell, mouse proof pedals. A well known standard American make of instrument with a very rich tone and offered as a special bargain at $68

THOMAS six octave piano cased organ, handsome mahogany case, rail top with mirror, sliding fallboard, lamp stands, has 11 stops including Vox Humana, Forte, Bass and Treble Couplers, Viola, etc. Grand organ and knee swell, mouse proof pedals. This instrument is brand new but has become slightly shop worn. Regular price $150. Special bargain price $99

SQUARE PIANO BARGAINS

JENNYS & SON, New York, square piano, rosewood case with octagon legs, has harp scale, 6 1-3 octave keyboard; has been carefully over-hauled in our own workshop and will make a fine practice instrument. A special snap at $49

DUNHAM of New York, handsome large carved legged square with dark rosewood case, has full metal frame with overstrung scale, 7 octave keyboard. A magnificent instrument with an elegant tone and a snap at $100

UPRIGHT PIANO SPECIAL

CABINET grand upright piano by Shomer & Co., Boston, in handsome highly polished mahogany case, Louis XV design with Boston fallboard, long plain music desk, full metal frame with bushed tuning pins, overstrunk tri-chord scale, 7 1-3 octave keyboard, 3 pedals. This is a brand new piano with an elegant tone and will be an ornament in any parlor. Regular price $450. Offered as a special bargain at $285

VERY EASY TERMS

Just a few dollars needed now—balance in small monthly payments.

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Quickest-Cheapest-Best Way To Clear Stump Land

The Kirstin way of land clearing is the easy, sensible, practical, economical way. Small investment to start with—no extra cost for help, because one man alone operates the Kirstin with ease, pulling out the biggest, toughest kind of stumps in less time than by any other method. With brush, hedges, small stumps, saplings, etc., you "yank 'em out" in bunches. Clear an acre from one anchor.

The "KIRSTIN" Improved Double Leverage Model

has enormous strength and power. Until you see a Kirstin at work you cannot realize what wonderful power is developed by our system of compound leverage. The work positively is easier, to say nothing of being quicker and cheaper than with the cumbersome hand power pullers or the big horse-power pullers that require a team and two or three men to operate.

Our Quick-Detachable Connections, Auto Release, Non-Twisting Cable and other special patented features put the Kirstin in a class by itself. Endorsed by Government and State officials. Used by the thousands all over the world. Holds record for lowest land clearing costs.

Write Today For Big New Catalog

which explains all about the Kirstin, tells best way to clear land, describes Kirstin Service, Liberal Try-out Offer, Easy Payments, etc. Get this book before you buy a stump puller. Write today—now. *Agents Wanted*

A. J. KIRSTIN CANADIAN COMPANY,
6004 Dennis St., - Sault Ste Marie, Ont.

One evening, just when April was coyly fading into May, Miguel appeared before his employer so evasive and general in his remarks that Barlow knew a request was forthcoming.

"Well, what is it?" he demanded.

The Mexican, thus abruptly halted in his natural mode of procedure, explained with some embarrassment.

"There is fiesta at Alfores, senor, tomorrow. Very holy day for the good Saint Miguel, for whom I am named. Anna and I would like to go for two, t'ree days."

"Anna? But what on earth would we eat if Anna goes away?"

"'I can cook," Jane broke in quickly. "We all had to learn to cook at the hospital. Please let them go, Gordon. I—I'd just love to cook for you—for a while!"

He surprised the glow in her eyes, and turned his face away quickly. Almost—almost he had read the meaning of it. It seemed to dangle just before his eyes, visible, but too close to make out its nature.

"Go ahead, Miguel," he said gruffly, "Go ahead and stay as long as you like."

Lunch proved her culinary prowess to be no empty boast. The omelet was as light and creamy as a cloud, and the biscuits even more airy, if possible. At his admiring compliments she flushed delightedly, flushed and looked at him, and again his gaze shifted. The secret was close, but still too close!

That afternoon, as he sat over his maps, and Jane was as industrious as usual in the garden, he began to see, only dimly at first, for its was so stupendous that he could not readily believe. He had watched her for some time, and as he watched the truth began to rise before him. Up and down the beds she moved, bending lovingly over the plants. Her movements were supple, graceful, and assured. The contour of her body, as she bent, was round and womanly. With a shock he realized that the harsh angles had gone, and with them the old, stiff movements of her weakness. Even from where he was, he could see the clear, healthy brown of her cheeks, and the full column of her throat, which had once been so thin and knotty.

The discovery was really too big for instant realization, and he sought the key through his old method of action. With his head bent in thought he strolled down the slope to the clear stream in the bottom of the arroyo. Here he found a boulder beside the water, and sat down, for his knees had suddenly become weak and trembling.

She loved to see things grow, she had said—little things! He had scoffed openly, had inwardly boiled at such sentiment; but now for the first time he came to realize. It was her nature. She was a woman; and he was a man, and her husband.

Then there came to mind the healthy brown of her cheeks and the rounded curves of her body. The old unrest that stirred him when he heard her toss in the night in her room across the patio, gripped him like a vise.

And then all thought fled before a swift rush of fear, for the regular movement shadowed in the water, which he had been watching unseeingly for some moments, thinking it but the waving of a weed in the wind on the cliff above, resolved itself into its true reality. It was the tail of a jaguar, outlined against the sky as it crouched there above him.

Slowly his eyes lifted and looked into the green eyes of the beast. Even in the stress of the moment he noticed the animal's thin ribs, and in its eyes he seemed to read an almost insane desire. He remembered Miguel's words:

"Sometimes, when he hongry, man."

The great cat was crouched as if about to leap; but suddenly the green eyes shifted to the trail above. Barlow's own gaze, freed from their almost hypnotic power, fell to the water again. There in the perfect mirror was another figure, slender but rounded, standing above and behind him, in her outstretched hand the little pistol he had given her.

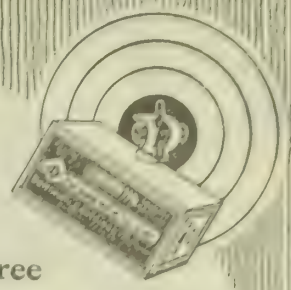
Even as he looked, the report rang out. The jaguar wailed aloud in sudden hurt and anger, leaped and clawed the earth, then leaped again, and was gone, a long, low streak of yellow, hardly distinguishable against the drab hillside.

Barlow turned back to his wife. Grasping hands, they rushed without a word to the hilltop and the gate of the hacienda.

His escape from the jaguar was belittled at this moment by a new realization that had come upon him. His eyes were wide with wonder.

"Jane," he stammered, "do you realize that we ran up that hill—ran!

No Matter What You Want to Shoot



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for small game or big, for target shooting or at the traps answers the ammunition question completely. Whether it's the powerful 303, a 22, one of the fast Shot Shells, or the other popular sizes, insist on the box with the big "D". It's the trade mark of Made-in-Canada ammunition that gives perfect shooting results.

Send for free colored hanger "A Chip of the old Block".

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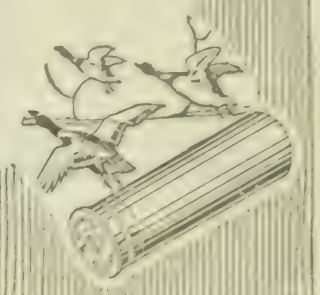

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You can get it from your dealer at only $9.25. Every horse is benefited by being clipped in the spring and this is the best machine to do it with. All the gears are cut from solid steel and run in oil; flexibe shaft is six feet long and the clipping head is the latest improved Stewart patent, best quality. Get one from your hardware or saddlery merchant now. Look for the name on it. If your merchant does not have it, write us.

CHICAGO FLEXIBLE SHAFT CO.
F 609 N. LaSelle St. CHICAGO, ILL.

When we first came here, it was all that we could do to walk up it."

She smiled the cryptic smile that had so disconcerted him.

"'Silly, don't you know that the six months were over long ago, and that neither of us has coughed since Easter?"

His jaw dropped, and then the fierce, mad joy that burned through his veins brought the secret clear before him.

" of course, of course! You're brown, you're round, you're healthy."

His arm went about her waist, as if to prove it. He saw the glow in her eyes, and he knew what that was now, too— what it held for him and for the little things that grow.

"Jane," he babbled, "I'm going to kiss you!"

And he did.

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A trial order would, we feel confident, be to our mutual advantage.

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HOWARD & SCOTT, Cornwall, P.E.I.

County Vice-Presidents' Reports At the N. B. F. & D. A.

(Continued from page 379.)

think, and we feel that something should be done quickly to protect the sheep raisers. We would suggest that a tax be placed on all dogs in the county, to be collected by the regular tax collector. The money to go towards a fund to reimburse farmers who have lost sheep. This might put a stop to many useless curs being kept.

W. C. GALLOWAY,
Vice-Pres. Chatham Co., N.B.

QUEENS.

I thnk Queen's Co. is counted as one of the Lumbering and Mning Counties of the Province. This is taken by many as a good reason, or, at least, an apology for the fact that we are slow on farming. If the people of our country are prosperous, what difference how they make their money? Isn't a dollar from the mine, or the railroad, or the lumber business just as good as a dollar extracted from the soil. If you work in a mill or a mine you don't have to wait a year for your pay, you get your money quickly—yes and you generally get clear of it quicker too. More lively every way than farming. A good many even get to the end of the journey long bfeore the farmer does. Then—if there is any life insurance, the money is immediately put into circulation. This is business.

But Farming ! ! Farming ! !

I have been asked by this Association to report on agricultural conditions in my community, noting any visible improvements in stock and the farming business in general. I may say that if you can accept what I have already said as an indication of what the majority of our people are thinking, then I am sure you will be prepared to hear a report of little improvement in the farming line.

The crops the past year were light —why? Partly, of course, on account of unfavorable climatic conditions, but mainly I believe on account of lack of drainage and through cultivation. Keeping horses to work all summer is a lesson we haven't leraned yet. That Queen's Co. had not a better and a larger harvest last fall was not all the fault of providence. There's a little book published now called "Seasonable Hints"—one of the efforts of the Government to stir the farmer.

There is also an old book, that we all have access to, with many "Seasonable Hints" in it for the farmer—let me give you one or two.

"He that tilleth his land shall be satisfied with bread." "He which soweth sparingly shall reap also sparingly."

I saw posted up in a business office onece, this: "A Hint is better than a kick."

It would almost seem that in the case of the farmer that should be reversed.

The "Hint" hasen't operated in very many cases. It has come to us from public speakers employed by the Government, in many cases splendid practical men, full of enthusiasm over the prospects for the farmer.

It comes to us in the form of reports from Experimental farms, giving the results of years of testing, demonstrating the advantage of "Seed selection, rotation of crops, thorough cultivation, growing clover, purebred stock, etc., etc."

Few have taken the "Hint." It may be that the "Kick" Germany is putting up will have more effect . That necessity will compel more attention to farming. Somtimes drastic measures are necessary to reform. War conditions call for a change. The slogan "Business as Usual" had to be dropped in England. W have no right to continue our "Business as Usual." For a good many young men at this time, the fact of their fitness for military service settles pretty clearly the question as to their duty. I think some may face this question squarely and honsetly and still not "Enlist," but we ought to be able to say of such men that they are rendering better service to their King and country by remaining at home. War conditions call for a change. Many farmers in our county could not plead the importance of their business as a good reason for not going to the front.

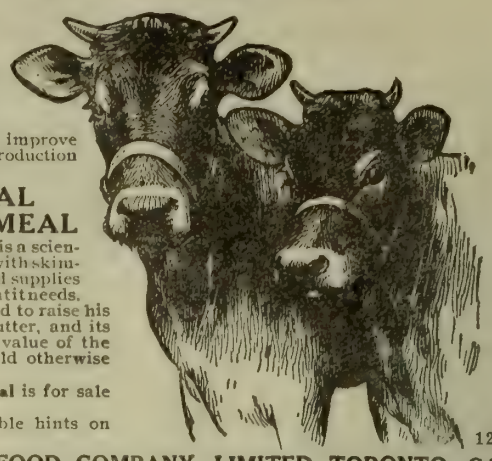
There is every incentive to do better farming. Just now, in the first place, it pays. I have farmed for thirty years in Chipman and can say without any hesitation that I find conditions for the farmer continually improving.

One of the main features of improvement I would note is that we can now generaly get cash for what we have to sell, and if we have a first class article we can set the price, and get it. This is gratifying to any farmer, but is especially important in the way of encouragement to the enterprising boy in the farm home. There is nothing quite so convincing to the boy that farming is a good business, as getting a good price for what he has raised on the farm and getting the money himself.

We hear a good deal these days about agricultural education, and some

SELL YOUR MILK

MANY a farmer who would like to raise his calves is prevented by the amount of milk necessary to feed them. By raising them he could select the best of the stock and improve the standard of milk or beef production of his herd.



INTERNATIONAL GROFAST CALF-MEAL

solves the problem for him. It is a scientific preparation which, mixed with skim-milk, takes the place of milk and supplies to the calf every food element that it needs.

By its use the farmer is enabled to raise his calves and sell his cream or butter, and its cost is a trifle compared to the value of the whole milk that the calf would otherwise need.

International Grofast Calf-Meal is for sale by dealers everywhere.

Write for our book of valuable hints on raising calves—free.

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INTERNATIONAL STOCK FOOD COMPANY, LIMITED, TORONTO, CAN.

Spraying Pays

SAVES your crop from loss, helps tree and plant to produce better and larger crops, prevents spread of disease, insures a longer life for trees and a longer growing time for vines each year: Blight hit potatoes in many states in 1915—many million bushels lost. Spraying would have saved them.

IRON AGE Sprayers

Include bucket, barrel, power and potato sprayers in many sizes and variety of equipment to suit each man's needs. We want to show you what each one is, how they are made and what they will do: Ask your dealer to show you these tools and write us for booklet describing all of them fully. We also have a spraying guide which we are glad to send.

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We pay freights to Humphrey's Station on all lots of 100 pounds or over.

On application we will be pleased to furnish current rates.

J. A. HUMPHREY & SON, Limited,
MONCTON, N. B.

wise ones claim that the hope of the farming industry is in the country schools, when the instruction in those schools is as it ought to be.

I havent' a word to say against that doctrine, but I have this to say in closing. I hope that we as members of this Association, many of us farmers in middle life, I hope that we are not going to sit down and wait for the next generation to do what we can do now if we will. We owe much to the older men of this Association, and to others who unselfishly labored to stimulate more interest in farming. We are reaping the benefit of their labors. We have privileges and opportunities that did not come by chance.

A man who had once been greatly helped by a friend, said to his benefactor, how can I ever repay you; and the friend replied, Pass it on to others.

How are we to pay what we owe? Can't we do it by showing more enthusiasm in our farm work. Can't we do it by making the best in the community in which we live? Can't we do it by making the home life such that the boys and girls will be convinced that there's "no place like home"—a farm home? Can't we demonstrate to them the truth which they are now being taught at school, and which the newspapers are now proclaiming—that the business of farming is the most important and one of the most honorable and independent and pleasant occupations in Canada?

I think we can.

ISAAC W. BAIRD,
Chipman, N.B.

RESTIGOUCHE.

Mr. President and Members of the Farmers' and Dairymen's Association.

On behalf of Addington Agriculture Society No. 1, in the absence of the County Vice-President, I am obliged to make a very brief report. Just a few words in behalf of our Society and a general report of crops for last season.

The Society through the Sec. of Agriculture imported about eighty bushels of seed what for the benefit of our farmers which gave good yields, an average of twenty bushels per acre. We also imported between 800 and 900 bushels of oats which turned out very satisfactory. The Society also has purchased a pure bred Percheron stallion that is being used in the Society to encourage the raising of large draft horses, which find a ready sale in our district.

Th Society has also imported and sold within the County during the last year or two. pure bred dairy stock. I am pleased to be able to say that we have within our Society one of the best dairy herds in the province of its size. We hope to continue this work in the future and assist our farmers in any way possible.

D. G. STEWART.

SAINT JOHN.

Mr. President and Members of the Farmers' and Dairymen's Association.

As one of your Vice-Presidents for St. John C., I have been asked by the Association, through the corresponding secretary to make a report of the crops, of the live stock, of the improvements of agriculture in our County for 1915.

A report to be of value would require an amount of time and research that was not at my disposal. I may say as far as my knowledge goes, they were about the same in St. John Co. as prevailed over the larger part of th Province.

And, second, to give an opinion on the best methods to improve the present methods of growing crops. My! If I only could answer it. It is to large a question for me. I will venture a few suggestions. There are so many soils and conditions to be found even on one farm that each field and plot requires a study to find out what it needs, and what kind of a crop will do best. Our Dominions and Provincial Departments of Agriculture are only too pleased to give us any information that will help us. With a proper rotation of crops and our one-horse-sense I think will give us the best results.

Local conditions around St. John have changed very much these last few years. Many of the farms have been sold for sub-divisions—and sold for good prices, and a large number of houses have been built within the one, two and three mile circles around the city. Owing to the great development work being done at Courntey Bay and on the west side. The amount of work being done and the steady increase of the winter port shipping and the necessary large expenditures have increased the population to a large extent, which will make a larger near market for the products of this Province. I may say there are many good farms within the three, four and five mile circles around the city suitable for milk farms, market gardening, strawberry, small fruit and poultry raising. They can be procured now, not at boon prices. Should any farmer contemplate making a change it would be well to look after the different prospects.

Of course since the great war started our thoughts and minds have been turned into new channels. We are realizing that we are living in the greatest period the world has ever seen, and that each of us has a part to play with its resposibilities. Do we ask ourselves, are we doing our best to run and boss our little jobs, to make the best of them? that we may have ample for our families and a generous amount to give to those who are fighting to maintain our liberties and the great battles for Right, Justice and the World's Peace, which I think we will live to see established for all time.

R. R. PATCHELL.

SUNBURY.

Maugerville, N.B., Feb. 29th, 1916.

Mr. President and Members of the New Brunswick Farmers' and Dairymen's Association:—Greetings from the old county of Sunbury. As you are all aware our beloved country is at war. This condition of things causes the labor problem for the farmers to become more acute as time goes on. On account of this, many farmers are unable to produce as much as they would like to. Yet we would not call the young men back from the front if we could. We believe that they are fighting to save us from a life that would be worse than slavery if the Germans should win. But I firmly believe that the Germans will not win.

Coming back to the work of the farm, I think, generally speaking, that we farmers have very little to complain of on the past year's operations. Although we had a very cold, wet and backward spring for seeding, yet later on the weather became more favorable for plant growth. We had a good haying season, and a fine fall for harvesting the other crops. The crops with but few exceptions, were well up to the average. The potato crop was very light, and disappointing to a large number of farmers, but the prices for them are so high that it makes up to a large extent for the

(Continued on page 402.)

FARMERS

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For Spring Painting, In

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HOUSE PAINT—Why should you waste money on impure paint, or bother with mixing lead and oil, when you can get Martin-Senour "100% Pure" Paint for all outside and inside painting? Always the same in quality, color, fineness and purity.

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BARN PAINT — Martin-Senour "RED SCHOOL HOUSE" is the paint for the barn. It spreads easily—covers more surface—and holds its fresh, bright color against wear and weather.

WAGON PAINT — Keep the machines, wagons and tools fresh and bright — and protect them against rust and weather—by giving them a coat or two of Martin-Senour "Wagon and Implement" Paint.

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Write us today for "Farmer's Color Set" and name of our nearest dealer-agent.

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LIMITED
655 Drolet Street, Montreal. 74

Worms Sap Children's Health

Mothers often wonder why their children are not rugged and hardy. In a vast number of cases the trouble is—Worms.

Trade Mark

Signs of worms are: Indigestion, variable appetite, craving for sweets, nausea, vomiting, swollen upper lip, sour stomach, offensive breath, hard and full belly, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever.

Dr. True's Elixir, the 60 years time-tired Family Laxative and Worm Expeller, will expel the worms and restore the vim and vigor to your child. Good for adults also. Discovered over 60 years ago. 35c, 50c and $1.00 at all dealers'. Advice free. Special treatment for tapeworms. Send for book.

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Apart from the fact that our

"Easy-Pull" Spreader

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you must consider the working points. So drop us a card and learn why it is so popular.

LOW DOWN HIGH WHEELS

Simple Strong Reliable

Encourage Home Industry

The Smith Foundry Co., Limited
Fredericton, N B.

Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?

He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
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for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.

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An up-to-date High Grade Bicycle fitted with *Roller Chain, New Departure or Hercules Coaster Brake and Hubs, Detachable Tires*, high grade equipment, including Mudguards, Pump, & Tools **$22.50**

Send for **FREE 1916 Catalogue,** 60 pages of *Bicycles, Sundries and Repair Material.* You can buy your supplies from us at Wholesale Prices.

T. W. BOYD & SON,
27 Notre Dame St. West, Montreal.

Try an Ad in the FARMER

The Glory of the Garden.

There's not a pair of legs so thin,
there's not a head so thick,
Theres' not a hand so weak and white,
nor yet a heart so sick,
But it can find some needful job that's
crying to be done,
For the Glory of the Garden glorifieth
every one.

Then seek your job with thankfulness
and work till further orders,
If it's only netting strawberries or
killing slugs on borders;
And when your back stops aching and
your hands begin to harden,
You will find yourself a partner in the
Glory of the Garden.

Oh, Adam was a gardener, and God
who made him sees
That half a proper gardener's work
is done upon his knees,
So when your work is finished, you can
wash your hands and pray
For the Glory of the Garden that it
may not pass away!
And the Glory of the Garden it shall
never pass away!

—Rudyard Kipling.

Potatoes for Pigs.

The past season has produced a good deal of disease in the potato crop. Diseased tubers, unless in a state of decomposition, will be no harm to pigs. Good sound potatoes are too valuable for pig food, but the small ones and those attacked by disease may be utilized for the pig pen. Potatoes should never be given uncooked. When first got out of the ground it does not matter so much, but in the skin of the potato more especially, and more or less through the whole tuber, is a poisonous substance called solanine. The older the skin gets, the more there is of this, particularly if at all green. Cooking disperses nearly all, if not all, of this; a great deal is taken up by the water, and on this account water in which potatoes have been boiled should always be thrown away. Steaming is preferable to boiling, as there is then no chance of a careless person giving the water to the pigs. Potatoes like turnips, may be boiled down, and kept for a long time, and when a large quantity is affected by disease this is the only way of utilizing them. When steamed, break them up, and put in a large wooden tub—a treacle hogshead is good—and, when the tub is nearly filled up, saturate the mass with kitchen slop, taking care there is always an inch or so of liquid on the top, and the potatoes will keep for many weeks. When, however, potatoes are sound, no paln of feeding is more economical than giving them freshly cooked each day.

Small Breeders Sales.

The Maritime Farmer receives many letters which read something like this:

"Dear Sir:—Kindly discontinue my one cent a word advertisement. I have disposed of all my stock of ——— which I advertised in the Maritime Farmer. I have had orders for more than I can supply.

"When I next have anything to sell I will certainly use the Maritime Farmer's one cent a word ad.

"Yours truly,"

At this season of the year there are scores of poultry breeders who will find the Maritime Farmer's one cent a word advertisements the greatest sales organization in the Maritime Provinces.

Although the advertisements are cheap, they are none the less effective. If you have used them before you will have been convinced of their worth. If you have not been a user of the Maritime Farmer's one cent a word advertisement we advise you to try them.

The minimum charge in this classi-

The Great British Remedy.

COUGHS THAT HURT

That kind of cough must be stopped, and at once; it is dangerous. The severe strain it causes may have serious consequences. You can stop it—and cure it—with the World-famous British Remedy, Veno's Lightning Cough Cure. There is nothing in medicine more quick or more sure than Veno's. That is why it is called a "Lightning" cough cure.

Awarded the Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

Veno's Lightning Cough Cure is the most popular cough remedy in the whole world. Why? Because its a real cure, quick, sure, thorough because it is free from every kind of poisonous or dangerous drug; because it is as good for children as for adults; because a better preparation could not be made, if the price were dollars instead of cents. Trust Veno's in the treatment of—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness

Price **30** *cents.*

Difficult Breathing
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Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co. Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

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Will bring this Scale FREE to your Station

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The WILSON SCALE 2000 pounds heavy wheels, drop lever and 16 Diamond Steel Bearings that are guaranteed for 20 years against wear or breakage.

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147 West 24th St. RAW FURS, GINSENG, GOLDEN SEAL New York

If you have Live Stock for sale advertise it in The Maritime Farmer

fication is 25c and one cent a word over 25 words. Cash must accompany order.

Arostook's First Potato Shipment.

To Columbus Hayford of Presque Isle belongs the credit of growing the first potatoes shipped out of Maine. This occurred in 1872 or 1873, the year that the potato crop failed in about every state in the Union.

Mr. Hayford harvested that year, from three acres, 1050 bushels, an unheard of crop of tubers, in even that new country. It is interesting to know just how the land was prepared for this crop. Winter wheat had not been grown in the country, and wishing to try the experiment, he carefully prepared three acres of land and sowed the wheat. In May a careful inspection of the field showed here and there a spear of wheat, but not nearly enough to warrant a profitable stand later. Not at all discouraged, Mr. Hayford turned the soil of the wheat field over and planted it to potatoes, the 1050-bushel yield being the result.

This was a burdensome product, far from railroad or seaport, but fortune favored him to some extent, inasmuch as there being an Aroostook boy, an acquaintance of Mr. Hayford, employed in Boston, where potatoes could not be procured at any price, he was sent down to Maine to see if he could buy a few potatoes. He went directly to Mr. Hayford, bought 200 bushels, paying 60c per bushel. These were hauled to the Aroostook river, loaded on boats and shipped down the river to Tobique, where they were transferred to another boat and sent down the St. John to Fredericton. Here they were again reloaded and shipped to Boston, where they brought an almost fabulous price.

The facts as here related do not exactly agree with the statement made in the Question Box a few weeks ago, but as this is Mr. Hayford's own story, we are pleased to publish it.—Maine Farmer.

Thick wind or Whistling.

I bought a horse a few months ago fully guaranteed as to soundness that makes considerable noise and has some difficulty in breathing when he is made to pull a load up a grade; when stopped he quickly gets his breath. Is he sound? Should the toe be short or long where ankles are cocked or knuckled?—O. K.

I should not call this horse sound, although the difficulty may be no more serious than a thickening of the membranes of the throat, causing difficulty in breathing when a large amount of air is needed. I suspect it to be a mild case of roaring or whistling, which will very probably grow no better with hard work. In case of knuckling or recent development benefit is often given by cutting heel short and allowing the toe to grow, thus throwing the fetlock back into place, but in cases of long standing it is probable that best results are obtained by the reverse treatment; that is, cut the toe short and keep the heel long, thus relieving the strain.

Percent of pure Blood in Grades.

What percent pure Clydesdale will the foal of a three-fourth Clydesdale mare be bred to a purebred Clydesdale stallion?

This question is a more difficult one to answer than might be supposed from a hasty examination of the facts. In everyday practice one would say without much hesitation that the foal of a three-quarters Clydesdale stallion is a seven-eigths or 87.5 percent pure Clydesdale. We calculate this by simply taking an average between the blood concentration of the two parents involved. For instance, if we cross a grade mare to a pure Clydesdale sire, we add 0 percent to 100 per cent and divide by two. Hence, we say the foal so produced is 50 per cent pure. If we then mate this 50 percent pure animal to a pure Clyde sire, we add 50 percent to 100 per cent and again divide by 2, giving us 75 per cent. This process can be carried out indefinitely in this manner. However, in order not to mislead, we must say that the expression "a seven-eights pure Clyde" is a sort of general term, and signifies only that 7 of its 8 grandparents were eligible to registration. A seven-eights Clydesdale may on the one hand be no better than a one-half Clydedale, or, on the other hand, it may be as good as a pure Clydesdale for breeding purposes. The generations produced by grading show much variability, the earlier ones usually being the more variable; and so we cannot always say that any particular seven-eighths Clydesdale is just as good as any other seven-eighths Clydesdale for breeding purposes just because they are all called "seven-eighths.'. One must select the best of a given geneartion in order to make the most progress in grading up.—J. A. Detlefsen, Illinois Experiment Station.

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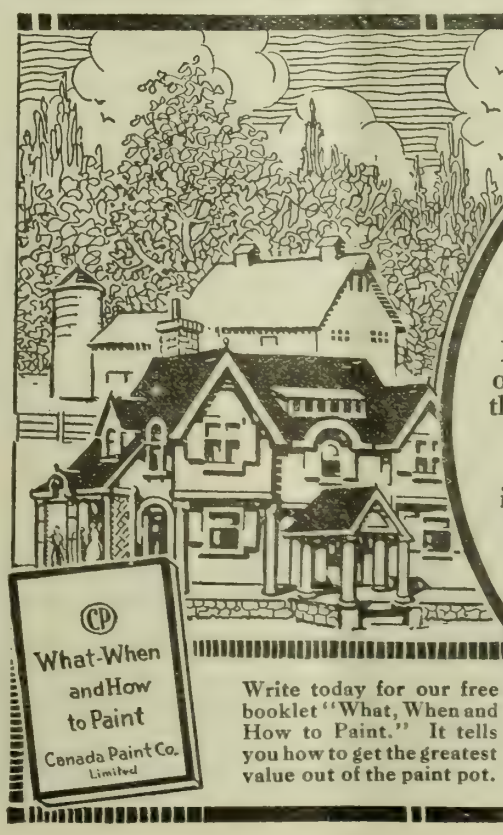

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The Canada Paint Co., Limited,
509 William Street, Montreal.

For bare walls use "Sanitone"—the new washable wall paint.

CP

County Vice Presidents' Reports at the N. B. F. and D. A.

(Continued from page 399.)

small crop. The same conditions applies to the apple crop, also to the small fruits.

Apple growing is on the increase in the county. We have quite a number of large commercial orchards, and on most of the farms will be found a few apple trees. As regards the small fruits, very few pay any attention to them (except to eat them.)

The hay crop was very good, and the prices for it away above the average. So much for the crops.

I will now say a few words on stock raising. As far as I have been able to find out, there is a marked improvement the last few years, more pure bred males being used than there used to be. In the past we make a mistake (I am refering now to the average farmer) in not choosing a certain breed and sticking to that breed. We mixed the breeds up too much for our own good and profit. I am glad to see that this mistake is being remedied. I believe the average farmer does not keep enough stock, for the "land's sake" at least. On account of this many farms do not produce more than one-half that they should. Many of us have depended too much on artificial fertilizers. Too little attention is paid to the dairying industry. In my experience, dairying and hog raising are far more profitable than beef raising.

Of course, dairying keeps one tied at home, of which fact a good many men object to. Nevertheless I would like to see a good many more cows in the county, for I believe that in the keeping of cows and pigs, the fertility of the soil will be raised to a much higher state of production. This means more profit for the farmer.

The outlook for this year is good. Now is the time to plan our next season's operations, so as to have our work well in hand. We should all try to increase crop production as much as we can, and to make two blades of growth in the place of where one grows at the present time.

I regret very much that I am unable to attend the meetings of the association. Hoping you will have a very successful convention. I will now close my report. I remain, yours in the interest of the work of the Association.

ERNEST C. BURPEE,
Vice-President for the County of Sunbury.

WESTMORLAND COUNTY.

To the President and Members of the Farmers' and Dairymen's Association of New Brunswick.
Gentlemen:—

As Vice-President for the County of Westmorland I am pleased to report as follows:

The Spring of 1915 was late for seeding, but favorable for grass. The new seedeed started strong with an abundant catch of clover; the old meadows in the absence of winter killed got a good start, and with the moist weather through June and July gave a good growth of grass, giving the farmers one of the largest crops of hay in the history of the County.

Seeding was late; farming not being general until about the first week in June. There was not as much wheat sown as usual owing to the late spring, but what was sown was a fair yield; the crop being about one-third short of the average. Early oats was a fair crop, yielding well, but the later sown failed to mature and had to be cut as green feed.

Barley was sown to a greater extent than usual, doing much to make up for the shortage in the oat crop. Buckwheat was about an average crop. Potatoes were about half a crop. but of excellent qquality and are reported to be keeping well.

Turnips were a light crop. There is much hay being shipped from the County, and while it is bringing in a lot of money to the farmers, I think it would be more profitable to keep more cattle and sheep and sell less hay, thus increasing the fertility of the soil.

There is considerable fertilizer used in our County with varied results. Slag appears to be the most popular of any grade of fertilizer used. The chemicals bought from the Agricultural Societies United and mixed at home gave decidedly better results than factory mixed fertilizer, especially the potato fertilizer, which saved the farmers about $15.00 a ton, and gave better results.

Dairying in our County has not advanced as fast as it should; partly due to the neglect given to the dairy cow, and partly for the want of labor on the farm. We would recommend our Department of Apriculture to instill in the farmers a greater desire for dairying, as we believe it to be the backbone of the farming industry.

We would also ask our Department of Agriculture to provide some measure so that each dairyman's butter would be known in the market and condemned or accepted as his individual product, giving the good article the preference it deserves in the market.

The standing crop competition carried on in our County has been a decided success and has done much to improve the standard of our seed grains.

Our Local Exhibitions have shown vast improvements in the last few years, particularly the Botsford and Westmorland Agricultural Society, which leads our county in everything except beef cattle.

There was more than the usual amount of ploughing done last fall, denoting the intention of the farmers to grow larger crops than in any previous year, and help supply the Empire with food.

In conclusion we thank the Agricultural Department for the able men then sent out to lecture and demonstarte to us on general farming.

J. F. REILLY,
Melrose, N.B.,
February 28th, 1916.

YORK COUNTY.

Mr. Chairman and Members of the Farmers' and Dairymen's Association.

I herein make my annual report for 1915:—

The winter was mild with very little snow.

Spring opened early but the weather proved cold and wet, making seeding late.

Many of the seed potatoes rotted in the row. In some fields the loss was fully 50 per cent.

Grain suffered a good deal from the wet, especially in flat or undrained lands.

Grass made a good showing early in the season, but did not come up to the average in the harvesting. The absence of clover was very noticeable all over the County. The grain crop was light. Oats and barley were of good quality, but buckwheat was almost a failure. Wheat, while not extensively grown, showed a large increase over previous years.

Potatoes were only about half a crop. A few farmers received good yields. In making inquiries you would generally find that, in case of a large yield, the Bordeaux mixture was used, which is a good preventive of rust.

Turnips were only about two-thirds crop.

Pork and beef went on the market much thinner than common. There has been a good increase in pure bred stock throughout the County. We are commencing to find out that it pays to improve our stock and that by liberal feeding the returns are much greater than when we raised nothing but the old-fashioned scrub.

The Durham cattle are taking the lead for general purposes, followed closely by the Holstein. There are also a few Ayrshires and Jerseys. There is a decrease in the sheep industry.

I am sorry to say that there is still a lack of interest in the breeding of

"The Farm Help Problem Doesn't Bother Me"

"I am absolutely free from worry about farm help. The old-fashioned drudgery that used to make farmers old men at forty is as out of date as swallow-tail coats. The Gasoline Engine has changed it all. I can do more work sawing wood, chopping and grinding feed, watering the stock, cutting silage, filling silo, turning the grindstone, churn, separator, washing machine, etc., filling the water-tank, which gives pressure for hose for washing buggies, cleaning barn and stables, sprinkling lawn or putting out fire, with the help of my gasoline engine than I ever could with a hired man—and—just think—at how much less cost! Besides, an engine turns a lathe, a sewing machine, or an ice cream freezer. If I do want a hired man, it is twice as easy to get a good one when I have a good engine. It pays—any way you look at it." This is the talk of a prosperous farmer who bought his engine and equipment from the Ontario Wind Engine & Pump Co., Limited.

Toronto Engine 1¾ h.p. to 8 h.p.

The Toronto Engine is somewhat lighter in construction than the Chapman, and sells at a lower price. It is strong, and it gives its full rated horse power. There is no work that any gasoline engine of its size can do that the Toronto Engine will not do. (1)—It has special air valve and priming cups on all large sizes. (2)—Convenient spark changing device to prevent back-firing. (3)—Efficient speed changer giving wide variation of speed without stopping engine. (4)—Automatic oiler for connecting-rod bearing. (5)—Either battery or magneto ignition or combination system as required by purchaser. (6)—The larger sizes are capable of sawing wood, grinding feed, cutting straw and corn, and threshing, as well as the lighter work, and pumping water.

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The Chapman Engine is the Big Power, Big Work Engine. It is so good that other makers try to imitate it. It has points that are patented which no other makers dare copy. It generates power in excess of its brake h.p. rating. It is the only engine with (1) a perfectly straight-line valve motion; (2) a combined suction and pump-feed fuel supply (3) a non-leakable, cast iron fuel tank; (4) a cam box containing the operating and ignition mechanism which may be easily removed; (5) fly ball governor that gives a variation of 250 r.p.m. without stopping the engine. These are not half the special features. When you buy a Chapman Engine, you are getting the best and the only one that has these numerous advantages. We would like to tell you more about the Chapman Engine.

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"Toronto" Silos—Made of 2 inch, creosoted, selected spruce, double tongued and grooved, with steel splices in stave butts. Doors are air-tight. Shipped complete, ready to set up. Write for descriptive folder.

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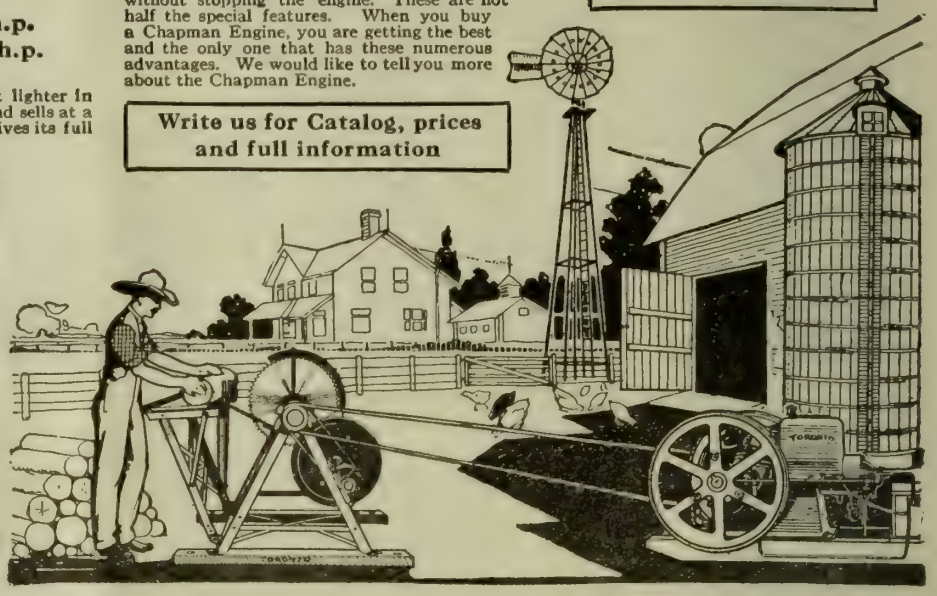

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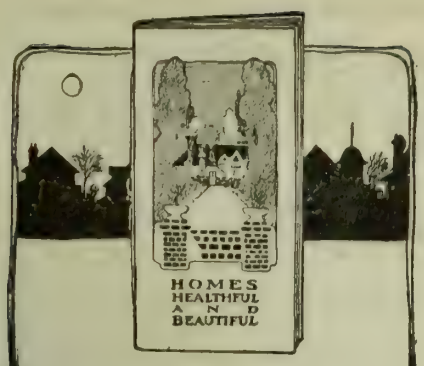

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(With furnished rooms in colors)

Think of the time saved in worry and experimenting. Think of the possibility of avoiding **serious mistakes.** Some of the sub-headings show just how practical this book is: "The Influence of Color"; "Light and Shade"; "Harmony in Colors—How to get the Right Effect"; "Value of Conventional Designs"; "Plain Tinting"; "Color Values."

Alabastine

Sanitary Wall Tints

If you are going to decorate a room or your whole home, enclose 15 cents in coin or stamps and get a copy of "Homes Healthful and Beautiful." It gives many a useful hint for the treatment of bed-room, living-room, dining-room, halls, parlor, including even the kitchen.

THE ALABASTINE COMPANY LIMITED
37 Willow Street Paris, Ontario

26

pure bred horses. The Clyde is a general favorite as a work horse. The question has been asked: What is the best method of growing crops under present conditions?

My answer would be (1st) Good clean seed. (2nd) Plenty of cultivation. (3rd) Proper rotation of crops.

I am not much in favor of buying phosphate at present prices. I believe in feeding the crops to stock of some kind. In this way the fertility of the soil can be kept up. A good clover sod will grow almost any crop with plenty of cultivation. therefore I would advise the sowing of plenty of clover seed. It is the cheapest fertilizer that we can buy.

LUDLOW T. HOYT,
Vice-President York Co.

FOR SALE!

SEED WHEAT

Two Thousand (2000) bushels of extra choice selected, Ontario Seed Wheat.

As the quantity is limited orders should be sent in at once.

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SEEDS 20 Packages High Grade Flower Seeds 5 bulbs. Pine Tree Nursery, Pemaquid, Me **15c**

$120.00 SURE Congenial work at home among church people. Man or woman, 60 days or less. Spare time may be used. No experience required. INTERNATIONAL BIBLE PRESS, Spadina Av. Toronto

Experimental Work in Top Grafting.

(Continued from page 383.)

that they produced nearly all clean fruit in this one of the worst scab seasons for years, leads to the belief that the experiment is worth trying on a larger scale. The data relating to the experiment is as follows:

Trees pruned April 15th.

Fameuse tree, 1½ hours removing top growth.

St. Lawrence tree, ¾ hour removing top growth.

Trees sprayed with winter spray May 10th.

Trees sprayed with summer spray May 21st.

Trees sprayed with summer spray June 3rd.

Trees sprayed with summer spray June 17th.

Trees sprayed with summer spray July 13th.

Trees sprayed with summer spray August 14th.

Fruit harvested October 14th.

Fameuse tree yielded 4½ barrels tree run.

Packing out 85% clean.

Packing out 10% large scabby.

Packing out 5% culls.

St. Lawrence, one bushel, all good.

E. Wallace in bulletin No. 335, of the Cornell Experiment Station (1913) gave some striking figures on the number of spores of apple scab discharged from parathecia on fallen leaves. He found by actual test that from a fragment of leaf one centimeter square 5630 spores were discharged in forty-five minutes after the leaf was wet. An estimate based on this and on average orchard conditions showed that if trees were set 40 feet apart each way and the ground between was covered with scabby leaves (as the ground in many orchards is) that there might be 8,107,200,000 scab spores discharged into the air for each tree in forty-five minutes of rainy weather. He also found that these spores were thrown into the air a distance varying from one-half to a little over one centimeter, giving abundant chances for air currants to scatter them about the orchard. The time of liberation of these spores he found to be just before the bloom buds opened.

From the results obtained at Cornell it would naturally follow that any means which would destroy the leaves before the spores were discharged would also prevent some of the infection, the results being in proportion to the thoroughness of the work. With the object of trying this plan as many of the leaves as possible in the Lingley orchard were raked up and burned in April of the present year. In places where weeds and grass made it hard to reach them a little kerosene was sprinkled on to make a hot quick fire. This gave a fairly good clean up, with the exceptions of a few rows of strawberries through the orchard which held leaves that could not be burned, and a railroad cutting just beside the orchard that could not be properly cleaned. Kerosene was used from a watering can this year. Another year it is planned to use a mist cattle sprayer which will cut down the quantity used.

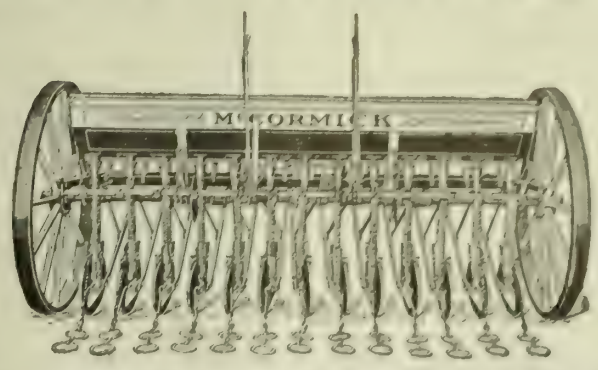
The cost of this work was as follows:

Raking and burning leaves, two men, ½ day	$2.00
6 gallons kerosene used at 20c	1.20
	$3.20

Dspite the incompleteness of the cleaning the results seem to show that it had been of value. The season of 1915 was unusually wet and dull, and in the Lingley section, near the sea, it was characterized by many foggy days. Apple scab was more than usually abundant in all orchards in the vicinity, but in the Lingley orchard the fruit was cleaner than ever before and the small amount of scab found did not appear until the first of August. In the three years 1812, 1913 and 1914, that the orchard was used for demonstration purposes it did not produce any Fameuse that were marketable. In 1915, the worst scab year of the four, it produced 18 barrels of clean fruit, a result that seems to justify a continuance of the work for another year.

The work planned for 1916 includes a more thorough cleaning out of all possible places where leaves were lodged, including the railroad cutting and adjacent roadside, hedges and fences, as well as pruning off all diseased twigs.

McCormick



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OF all the conditions that influence a grain crop—seed bed, planting, weather—there is none more important than planting. Your seed bed prepared, your seed selected, there is still a chance to improve the size and quality of the harvested crop by doing your planting with a **McCormick** single disk or hoe drill.

Good seed is too precious to waste. Plant it with a no-waste **McCormick** drill.

Good seed deserves the best possible chance to start and grow. A **McCormick** drill gives it that chance, by planting it in moist ground and covering it to an even depth with a protecting blanket of soil.

Good planting, such as is done by **McCormick** drills, removes many chances for crop failure, and adds to the net profits from your grain fields.

Buy and use a **McCormick** drill.

You can get one from the **McCormick** local agent, who will show you the many features that make **McCormick** drills such good planters. See the agent, or write us, and we will make it easy for you to own a **McCormick** drill.

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A roof that has stood rains, wind storms, and flying sparks for 18 years—the heat of 18 summers—the terrors of 18 winters—and is still giving service—carries its own recommendations.

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Paroid costs less than Shingles and is much the safer roof in case a fire is raging. Burning sparks and flying cinders do not affect a Paroid roof. Paroid is obtainable in Grey, Red and Green, and is the least expensive of all roofs on the only fair basis of comparison—service and satisfaction, and you waste no time repairing a Paroid roof.

Look for the Paroid Roll. By it you will know one of the 2,000 Neponset dealers in Canada.

Our booklet "Repairing and Building" will be sent you upon request—free.

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The largest manufacturers of Roofings, Wall Board and Roofing Felts in Canada 101

Look for the Paroid Roll

Try Neponset Wall Board in place of lumber or lath and plaster—you'll like it.

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Guernsey Cattle.

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Cheviot Sheep

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E. W. Heurtley, P. O. Sutherland's River, N. S.

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We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

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GLENEUR
FOR SALE !

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

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Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

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And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Two pure-bred, but not registered, Holstein Bulls, 16 and 18 months old, in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices, Write quickly if you want one of them.

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BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

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All infertle eggs replaced free of charge

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Lack of Potash in Commercial Fertilizers

By B. Leslie Emslie, C.D.A., F.C.S., Supervisor Investigational Work With Fertilizers Ottawa Experimental Farm.

W are today confronted with the problem of devising means to overcome the difficulties presented in the prevailing scarcity of potash. Our chief and almost exclusive commercial source of this fertilizer, as a result of the war, has been entirely cut off. The very small stocks of Muriate of Potash now found on the American continent find a ready sale at $450.00 per ton, which represents an advance of 1000 per cent in the price of this material. Needless to say, such a price prohibits the agricultural use of potash in this form. The war is responsible also for an increase of from 30 to 40 per cent in the price of Nitrate of Soda and Acid Phosphate, chiefly through the greater present demand for Nitrate of Soda and Sulphuric Acid (which is necessary to the preparation of Acid Phosphate) in Munition manufacture. Of the ten or twelve essential elements of plant food in the soil, but three tend to become seriously depleted by cropping. These are nitrogen, phosphoric acid and potash, the valuable constituents of commercial fertilizers. Each elecement has its own peculiar role to play in plant nourishment, and in its special functions, cannot be replaced by another. Potash is essential to the formation of carbo-hydrates represented by the starches, sugar and fibrous matter of plants, hence it is important in the production of the potato tuber, the dry matter of which consists almost entirely of starch. No farm crop is more dependent on an available potash supply than the potato; consequently it is the potato growers who most seriously feels the present lack of potash. In place of the popular potato fertilizers, containing 2-8-10 or 4-8-10 of nitrogen, phosphoric acid and potash respectively, the farmer is now offered a brand represented by the formula 4-10-0, and naturally revolts at the inferior substitute.

Domestic Sources of Potash. Barnyard Manure.

Our chief domestic source of potash is barnyard manure, the composition of which depends on the kind, age, function and food of the animal producing it, the quantity and nature of the litter employed and, last but not least, the care taken in its production and preservation. The result of a number of analyses of mixed fresh horse and cow manure from animals well fed and supplied with sufficient bedding to hold all the liquid excreta, shows an average of 10 pounds of nitrogen, 5 pounds of phosphoric acid and 10 pounds of potash per ton. Notwithstanding the exercise of the greatest care, it is impossible to avoid some losses from manure through fermentation and leaching. To prevent undue fermentation and consequent serious loss of nitrogen in the form of gasses, the manure heap must be kept compact and reasonably moist. Loss by leaching of the liquid manure may be reduced to a minimum by the use of proper absorbents and by protecting the manure heap from the action of heavy rains. Under general conditions the hauling out and spreading of the manure on the land as soon as possible after it is made, is unquestionably the best means of insuring undue loss of its fertilizing constituents. When we consider that more than 1-2 of the nitrogen and at least 3-4 of the potash of cow manure (comprising the largest proportion of farm manure) is present in the urine the necessity of conserving the liquid portion is very obvious. Furthermore, as these constituents are present in solution (and therefore almost immediately available) in the liquid manure, they are more valuable, pound for pound, than those in the solid portion.

Functions of Manure in the Soil.

The beneficial influence of manure is by no means confined to its chemical action in furnishing plant food to the growing crop, indeed its physical and biological effects are often of greater importance. The physical influence of manure is exerted through its humus forming function, whereby a light sandy soil is bound together and its water retaining power increased, and a heavy clay soil made more open and porous, thus permitting the freer circulation of air and moisture. Manure acts biologically alone in supplying humus as a medium for the favourable development and activities of the valuable soil bacteria, but in itself furnishes supplies of these organisms.

The Importance of Humus.

No soil can be highly productive unless adequately supplied with humus, which in addition to its other properties, represents the soil's nature storehouse of nitrogen, the most expensive element in commercial fertilizer. Where sufficient manure is not available for the maintenance of humus, recourse should be had to the practise of green manuring,—i.e. the growing and ploughing under of a crop of clover, vetch, buckwheat or rye, etc.

Wood Ashes

Good unleached wood ashes may contain from 5 to 6 per cent of potash, about 2 per cent of phosphoric acid and from 20 to 30 per cent of lime. Unfortunately, their alkalinity renders them unsuitable as a fertilizer for potatoes, since lime tends to encourage the development of potato scab. Their use, however, on soil believed to be free of the potato scab fungus, might be advised. In any case, wood ashes may be expected to increase the yield, the quality only being subject to depression.

Sea Weed.

To those living near the Seaboard supplies of kelp, rock weed and eel grass may be available. In composition, these usually compare favorably with barnyard manure, and represent a valuable material, of which full advantage should be taken. We have conducted some experiments in the drying and grinding of Sea Weed, the object being to discover whether the reduction of bulk and weight of the material by such a process would permit its profitable employment as a nitro-potassic fertilizer in districts remote from the coast. To ascertain its fertilizing value, a large number of experiments with potatoes are being introduced in the eastern provinces, this year, and until the results of these are available, no definite opinion on the merits of the ground sea weed can be stated.

Residue From the Manufacture of Beet Sugar.

The sugar beet contains on an average about 0.5 per cent of potash which is largely present in the resulting molasses. Some potash for fertilizer purposes is available from this source, but naturally, the quantity is insufficient to supply more than a very small fraction of the local demand.

Feldspar.

Numerous processes for the extraction of potash from Feldspar have been pateuted, but none has yet proved an economical success. Application of raw ground Feldspar to the soil have been made experimentally, but the results obtained were largely negative and in no case has any appreciable increase in yield been attributed to the ues of the material.

Alunite.

This is a hydrated sulphate of potash and Alumina, usually found in trachyte rocks. Hitherto, deposits of this material have been exploited as a source of Alum. In the United States considerable attention has recently been directed to occurrences of this Alunite at Marysville, Utah. These are now being worked successfully for the production of potash. The quantity produced from this source, however, cannot be expected to make any appreciable impression on the market price of potash, the demand of other industries leaving no surplus for agriculture.

Potash in the Soil.

In the clay and clay loam soils, derived from the gneiss and granitic rocks of the carbonireous and Silurian geological formations (prominent in New Brunswick), potash of felspatic origin is present in notable amounts. Clay soils generally are rich in potash, while sandy soils are naturally deficient therein. It is the proportion available rather than the total quantity of potash, or other plant food in the soil, which determines its crop producing power, at least in so far as the food supply is the limiting factor. The quantities of plant food supplied in an ordinary application of fertilizer are infinitesimal in comparison with the total amount of these already in the soil. Indeed, so small is the proportion added in this way that it might escape detection in a chemical soil analyses and yet effect a weighty increase of crop. It is to the fact that fertilizers augment the soil's supply of readily available plant food that their beneficial influence is due.

Availability of Soil Potash to Growing Crops.

Through the operation of natural agencies in the soil, aided by cultivation and drainage, plant food from the soil's original stock is gradually released in forms assimilable by the growing crop.

The power to assimilate a certain plant food varies according to the nature of the crop. For instance, turnips demand chiefly a liberal supply of available phosporic acid, and seldom require potash in the fertilizer, if furnished with a medium application of barnyard manure, notwithstanding the fact that a 700 bushel crop of turnips (roots) removes nearly three times as much potash as a 200 bushel crop of potatoes (tubers). A readily available, ample supply of potash is essential to the successful production of a potato crop.

Lberators of Soil Potash.

We are now led to enquire how we may facilitate the liberation of soil potash for the needs of the potato crop.

Lime and Lime Compounds

You have been told of the nature and functions of limestone and marl (carbonate of lime), burnt lime and slaked lime, all of which possess alkaline properties and are useful for the correction of soil acidity.

Burnt and slaked lime are exceedingly caustic in their action and rapidly decompose humus. For this reason their use should be restricted to soils rich in humus and to the heavier types of clay and clay loam soils. In addition to this effect, they exert an influence in the liberation of potash from insoluble soil compounds. However, owing to their strong alkaline properties, these materials should not be applied in preparation for a potato crop, which prefers a slightly acid to an alkaline soil.

Lime Requirements of Soils.

Apropos of the soil acidity question, some chemists claim that a soil which contains less than 0.5 per cent of lime is in need of lime. Such a statement requires qualification, as the charac-

(Continued on Page 417.)

Lime and Soil Productiveness

Liming of soils is a very old practice. It may be gathered from the writing of Pliny, the Roman, that progressive Roman farmers practiced marling or lining more than two thousand years ago. It was a common practice in England more than two hundred and fifty years ago. In the epoch making letters of Agricola published in Nova Scotia in 1818, the practice generally grew into disfavor owing to the fact that it was over done, and no doubt also owing to the fact that the underlying principles were not thoroughly understood. Only in exceptional cases is lime of value as a direct plant food. In general its effect is to create favorable conditions for the setting free of plant food already existing in the soil Hence, if means are not taken to keep up the supply of plant food, lime will ultimately deplete a soil of its store of plant food.

"Lime and lime without manure
Makes both farm and farmer poorer."

During the present century a wide spread movement for the use of lime in agriculture has grown up, and at the present time the judicious use of lime is being advocated by the leading agriculturists in nearly every state of the Union, in Eastern Canada and in parts of Europe also. However the underlying principles are now understood, and limnig is being recommended only in so far as it is associated with the increase of humus in the soil. The crops which are most benefitted by lime are the clovers, and modern practice has shown that where lime is used as a means of increasing clover production, it will not only stimulate the soil to which it is applied to give up its plant food but will actually lead to an increase in the amount of humus and nitrogen in the soil.

What Form of Lime?

A twenty years tests at the Pennsylvania Experiment Station where lime was used at the rate of two tons per acre of burnt lime every four years, or two tons of ground lime stone every two years, not only resulted in bigger crops but the plots to which lime stone was applied were at the conclusion of the experiment 375 lbs per acre richer in nitrogen, and contained 4.7 tons more humus than those to which burnt lime was applied. The lime stone produced all the results of the burnt lime, but was milder in its action and did not use up the organic matter as did the burnt lime. Many similar experiments might be quoted to show the superiority of ground lime stone over burnt lime.

In line with the results of this last described experiment modern lime users are strongly recommending ground lime stone instead of burnt lime. The advantages in its favor are as follows:

1. It is milder in its action and not, therefore, likely to cause any injury. In other words, it is "Fool proof."

2. It can generally be produced cheaper.

3. It is much easier applied.

Lime stone consists of lime plus carbonic acid. When it is burnt, the carbonic acid is given off and the lime left behind. One hundred pounds of limestone when burnt will yield fifty-six pounds of lime. Hence, in order to apply an equal quantity of active lime to the soil, one has to use practically two tons of limestone in comparison with one ton of burnt lime.

The geological formations of New Brunswick are practically the same as those of Nova Scotia, and the soils probably contain about the same amount of plant food and no doubt have the same chemical reaction. During the past three years, some hundreds of determinations of Nova Scotia soil have been made at the College at Truro, and the significant fact has been determined that about 95 per cent of Nova Scotia soils are more or less acid, which condition is not favorable to the optimistic growth of most crops. A further significant fact is that the average amount of lime found in soils from different parts of the Province was .25 per cent, whereas the average amount found in a good arable soil should be at least .3 per cent, and the average of two hundred very fertile United States soils contained 2.16 per cent of lime. Now, lime exists in the soil in several combinations, being united with carbonic acid. phosphoric acid, sulphuric acid, silicic acid as well as in combination with organic acids. The only one of these combinations which will help to correct acidity of the soil is the carbonate. Hence, the mere statement that a soil contains so much lime is not sufficient in itself to indicate the need of adding lime to it. But, when a soil is found to be below the average in lime content and to also be acid, experience has shown that the application of lime is likely to be attended with good results, and since this is the case with most Maritime Province soils, one is lead to expect that theoretically at least lime should give excellent results. What are the facts?

On the College Farm at Truro, the soil of which is derived mainly from red sandstone, three plots of oats and three plots of wheat were treated with ground limestone by Prof. Trueman in the Spring of 1914 at the rate of four tons per acre. Otherwise, this land was fertilized and cultivated in the usual manner. Corresponding plots were left without the limestone treatment.

No material difference was noticed in the yields of grain on the lime and unlimed plots. As soon as the grain was cut, however, the clover on the limed portions of most of the plots was found to be considerably ahead of that where no lime had been used This difference became increasingly noticeable right up to the time of the cutting of the clover in July, 1915. The figures presented in the following table show the actual amount of hay cut on the respective plots:

In studying this table it is worth noting that these were large plots, being either one-half acre or one acre in extent.

No. of Plot.	Size.		Amount of Cured Hay.	Yield Per Acre.
1	1 acre	½ unlimed	2550	2.5tons
		½ limed	3610	3.6 „
2	1 acre	½ unlimed	2570	2.5 „
		½ limed	3090	3.2 „
3	½ acre	½ unlimed	1160	2.3 „
		½ limed	1490	3.0 „
4	½ acre	½ unlimed	1150	2.3 „
		½ limed	2010	4.0 „
5	½ acre	½ unlimed	3650	3.6 „
		½ limed	3650	3.6 „
6	½ acre	½ unlimed	3050	3.1 „
		½ limed	3050	3.1 „

It will be seen that the gain from the use of limestone was not uniform. On Plot 1, the increase was a little over one ton per acre, while on plot 2 it was only a little over half a ton. On plot 3 the difference was 1320 lbs., while on plot 4 it was nearly one and three-quarter tons. On plots five and six the yields were practically on the limed and unlimed areas. The only explanation we can offer for the lack of results on the last two plots is that the soil was in extra good condition and the clover grew well even without the use of lime.

The total yield in favor of lime on the first four plots amounted to 1.4 tons and there was one and a half acres limed vs. one and one-half acres unlimed. That is a gain of .93 tons, which at $10.00 per ton would be worth $9.30.

In order to get his result four tons of limestone were applied so that the returns per ton of limestone in the first crop of clover hay was $2.32. There was nearly a corresponding difference in the second crop of clover, which was cut green for feeding purposes, there being eight-tenths of a ton more clover on the limed than on the unlimed plots. This makes the total extra return in the two cuttings for the year 1.7 tons, worth approximately $17.00, so that in this particular experiment we got back practically $4.00 for every ton of ground limestone applied. It must not, however, be forgotten that we got no returns worth speaking of from the lime applied to plots 5 and 6. Furthermore, smaller experiments carried on to determine the gain from the application of limestone to poor soils, resulted in very small yields indeed. The inference is that on a whole area to which limestone might be applied, the returns will vary greatly, but assuming that the soil is in moderately good condition and that the results from Truro are reasonably typical, one should expect about $2.00 extra clover crop for each ton of ground limestone applied up to four tons per acre, but do not forget one had to wait two years for even this return.

The limestone should continue to give results due to the extra heavy sod which will be ploughed under in the limed area as compared with the unlimed area and also due to its own beneficial effect on succeeding crops. Hence, one should reasonably look for at least double the above return at the end of five years which is about the length of time that a four ton application will continue to give noticeable results.

It is valuable in this connection to record the results which have been obtained at other experiment stations. In bulletin 400, published by the New York Agricultural Experiment Station. it is stated that, in Ohio, in twelve years of testing on many plants, moderate applications of limestone once in a crop rotation of five years on soils only moderately acid, have given average net profits of $15.00 an acre when used alone and from $2.00 to $5.00 more than this when used with phosphorous, with barnyard manure.

In the same bulletin it is stated that in New Jersey the value of the increase in general farm crops on five years after a two-ton application of ground limestone was placed at $ 5.00 per acre and the value of the increase in vegetables at $48.00 per acre. Other records of this kind will be found in an article on "Lime in Relation to

(Continued on Page 435.)

Teaching Children to Become Strong, Resourceful Citizens.

The following circular has been sent out to many teachers of our schools in the hope that they have caught the spirit of the hour and see their opportunity to influence for New Brunswick's advantage the lives of those under their care.

We wish our children, while they are still susceptible to favorable impressions to become acquainted with the magnificent natural resources that lie about them. We wish them to build their patriotism on the solid foundation of the province's power to yield them a prosperous and enjoyable living in return for intelligent industry.

In this period of the nation's need the children of New Brunswick, instead of standing idly by, can well take a hand and do their part. Thus they will strengthen their loyalty and deepen their patriotic attachment to home and country and at the same time gain a practical power which is the result of true education.

What New Brunswick may have to offer settlers after the war, what to her own sons and daughters to induce them to remain here and as progressive and patriotic citizens, help develop her resources and extend her influence depends in a great measure on what the schools are doing. The citizen of to-morrow is the product of the school of to-day.

If he is to be self-reliant, progressive, efficient he must acquire this power, not through mental effort alone but through the exercise of his entire being in relation to his environment.

Patriotic striving children become strong and resourceful citizens.

Sussex, N.B., Mar. 25, 1916.

Circular Letter.

To the School Garden Teachers of New Brunswick and other teachers interested,—

I beg to call your attention to the fact that this is a special year in our history. The war is causing us to lose many of our citizens who are agricultural or industrial producers. They have gone to fight for us. Thus the ranks of workers at home are being depleted and there is need that a special effort should be made not to permit a shortage in production.

There are more than 60,000 children in attendance in our public schools. Is it not fair for us to think that many of these children can do something to decrease the loss in production that is being caused by the absence of producers who are at the front? If every capable child would undertake to cultivate even a small plot at home, on a vacant lot, in backyard area or garden at school, while the quantity raised in any one case might be small, the aggregate would be large and of considerable value, and would help many families who might otherwise be in need.

Will not you as a teacher appeal to your pupils to engage in this work? They have been acquiring some knowledge of Nature Study and Elementary Agriculture. Many have been taking part in School Gardening. Here is an opportunity for them to put their knowledge and training to good account applying it for this patriotic purpose.

This Department will co-operate with teachers and pupils supplying them with a considerable quantity of seeds.

We believe that in every town as well as in country districts children will find much pleasure and profit in engaging in this effort. It has its educational value. It will eanble them to be a real factor in the present great struggle.

In addition to supplying seeds, our Department is also offering prizes for work done in districts where next fall there are school fairs.

The children should be taught how to prepare the land, to plant the seed and to cultivate so as to secure the best crop possible. Will you co-operate with us? Let it be known that the school children of New Brunswick are doers not merely dependents.

Applications for seeds should be sent in as soon as possible. Wheat, Oats, Barley, Buckwheat, Turnip, Carrot, Mangel and Potatoes are the principal seeds that can be supplied.

R. P. STEEVES,
Director Elem. Agri. Education.

N. B. Potato Growers Convention

T. W. CALDWELL
Pres. N. B. Potato Crowers' Association

Potato growing is one of the most important industries in the counties of Carleton, Victoria, and in portions of some of the other New Brunswick counties. It is the cash crop on whch a great many farmers speciali e. To these farmers a bumper crop and fair markets mean a whole lot. If the crop is good and the market it normal, bills are promptly paid and additional labor saving machines, and home necessities and luxuries can be bought. If the crop is a poor one, there is a possibility that scarcely enough cash will be realized to pay the heavy fertilizer bills. Other bills increase in amount instead of being diminished and the general cry is that everybody is confronted with hard times. Not only the farmers but the merchants, the tradesmen and all lines of business or organization feel the adverse effects.

The soil may have been prepared, fertilized and cultivated, good seed may have been planted, the season for growth may have been ideal, yet why is it that when the harvesting season arrives it is found that the yield is not perhaps one-third of the yield per acre realized by many other farmers in the same locality, who are working under the same conditions of soil and climate.

The cruix of the matter isthis:

One farmer has attended to every detail of crop production. He has made a study of his business either by reading, by listening to and heeding the advice of farmers who know, or by his own personal observation. His soil is well prepared, fertilized and cultivated. Due attention is paid to rotation of crops. The seed used is carefully selected and treated for scab before it is planted. As soon as growth appears weeds are kept down, the soil is kept well stirred to conserve the moisture. Disease plants are rogued from the field, and from the time the plants are a few inches high until they are ready to harvest they are frequently sprayed to prveent disease and keep insect pests in check. Treatment of this kind is a sure insurance and is bound to give maximum crops.

On the other hand the farmer who may or may not attend properly to preparation, fertilization, cultivation and seed will not get maximum yields if he fails to neglect the treatment of seed, the elimination of diseased plants and the keeping in check of fungus and insect pests.

Plant diseases are playing havoc with potato growing in New Brunswick as well as in Nova Scotia and Prince Edward Island.

The Federal Department of Agriculture has established a laboratory at Fredericton under the charge of Porf. G. C. Cunningham, Plant Pathologist, who has done considerable research work on plant diseases and whose duty and pleasure it will be to assist the farmers of New Brunswick in the control of plant diseases.

Soon after coming to the Province Prof. Cunningham realized the magnitude and importance of the potato growing industry in New Brunswick. He also realized that the growers were working very independently of each other—a lack of united efforts—consequently he decided that the best way to get united efforts for quality products and record production was to get the growers organized so that efforts might be united for the dissemination of knowledge re the various problems confronting the individual grower.

With this aim in view he called a meeting of interested growers to meet in Woodstock, N.B., on the 22nd and 23rd of March.

A convention of New Brunswick potato growers was held on March 22nd and 23rd at the Fisher Vocational School, Woodstock, which was attended by over 280 representative growers and delegates from the Agricultural Societies of the Province.

The morning of the 22nd was spent by those present, in the Exhibition Hall, were the Dominion Experimental Farms Agricultural Exhibition Exhibit was displayed, together with 60 varieties of potatoes which were grown and tested at the Experimental Station, Fredericton.

At 2 p.m. a meeting was held in the Lecture Hall, Mr. Wilmot Hay of Woodstock in the chair. The chairman called on Mr. G. C Cunningham, Dominion Plant Pathologist for New Brunswick, for an address. Mr. Cunningham addressed the meeting on "The object of the convention and the possibilities of forming a Potato Growers' Association," and in the course of an able talk, gave some interesting figures on potato production in the principle potato growing countries of the world. He also showed that a much larger crop per acre could be produced in New Brunswick by the employment of better methods of cultivation, seed selection and disease control, and to this end he advocated the formation of a Potato Growers' Association. Mr. Stuart Fiske spoke in favour of such a movement and moved that steps be at once taken to form an Association. Mr. J. E. Porter seconded the motion, and on being put to the meeting, it was carried unanimously. Mr. Porter asked that Mr. Cunningham give some particulars as to the manner of forming such an Association. Mr. Cunningham said that the first thing would be the nomination of a Constitution committee, and asked that Professor William Stuart, Horticulturist in charge of potato investigations, of Washington, D. C,. for some remarks on his knowledge of community work. Professor Stuart gave an interesting account of the methods employed in Wisconsin. Mr. W. T. Macoun, Dominion Horticulturist, also spoke and pointed out that British Columbia and the other Western Provinces were now in a position to compete strongly in the potato market and that it was necessary for New Brunswick to do everything to continue to uphold her reputation for good stock and to be first on the market He therefore strongly favoured the formation of an Association. The following men were then nominated by the chairman to act on the constitution committee: W. W. Hubbard, C. M. Shaw, W. E. Palmer, W. Moore, J. E. Porter and G. C. Cunningham.

The next item on the programme was an address by Professor W. S. Blair, Superintendent Dominion Experimental Station, Kentville N.S., on "Potato Improvement and Seed Selection."

At the conclusion of Professor Blair's address, Professor Stuart and Mr. Macoun joined with him in leading an interesting discussion on several question which came before the meeting, relative to the culture of potatoes.

The next item was an address by Mr. W. W. Hubbard, Superintendent Dominion Experimental Station, Fredericton, on "Varieties of potatoes suitable for New Brunswick conditions."

At the conclusion of Mr. Hubbard's address, the report of the Constitution Committee was handed in, with a copy of the proposed constitution and byelaws. It was moved by Mr. W. W. Hubbard, secended by Mr. W. H. Moore, that the report of the Constitution Committee be received and adopted. This resolution was carried unanimously. It was then moved by Mr. C. M. Shaw, seconded by Mr. J. Bremner and carried unanimously, that the thanks of the convention be tendered to the speakers. The Convention adjourned at 5.20 p.m.m

The second session was opened at 7.30 p.m., Mr. A. D. Holyoke of Woodstock, in the chair. At the outset, the chairman announced that owing to pressure of Parliamentary duties, the Honorable J. A. Murray, Minister of Agriculture, was unable to be present, but was represented by the Secretary of Agriculture, Mr. J. B. Daggett. Mr. Daggett expressed to the Convention the regret of the Minister at being unable to be present as follows:

Mr. Chairman, Ladies and Gentlemen:

I hardly think it would be unwise for me take up the time of this meeting in discussing the subject "Agriculture in New Brunswick" upon which the Minister had hoped to speak to you tonight, as I have spoken so many times and in so many places on this same subject. I would, however, express the regret of the Minister at not being able to be here to-night. He regrets his absence the more on account of the fact that on an occasion last summer when he was to have been with you, he was unable at the last moment to be present. As you know, on account of the illness of the Premier, Mr. Murray is filling the position of Acting Premier, and he found it quite impossible to be away from Fredericton just at this time. I would also like to say that I have many times expressed faith in the possibilities of New Brunswick compared with other provinces and the United States. New Brunswick now stands and will, I firmly believe, continue to stand in a foremost place in the agricultural world. We have disadvantages, but then again we have distinct advantages, and there is on every hand, decided evidence of a forward movement which has come to stay and which will increase in volume and power, in the interests of agriculture. At one time, agriculture was looked upon in this province as meerly a side line to the lumbering industry. These days are past and the conditions of 20 or 25 years ago have undergone a great change. Agriculture is now recognized as being no mean proposition and in every community we find intelligent men conducting their farms along scientific lines and showing themselves anxious for knowledge of still further improved methods of agriculture, which goes to show what a wonderful improvement has been made. We held the annual meeting of the New Brunswick farmers' and Dairymne's Association at Fredericton a few weeks ago, at which Mr. Barr, of the Dairy Division at Ottawa and Dr. Moore of the United States Department of Agriculture, were present. Both these gentlement have since expressed to me their pleasure at having been present to hear the intelligent discussions on the different subjects which were taken part in by the farmers present. From these indications, I believe that we are moving [illegible] ward. Again expressing the regret of the Minister at being unable to be present, I may add that he is doing everything possible in the interest of the farmers in this province and that so long as he holds the position, agriculture in New Brunswick will be allowed to hold no second place.

The next item was an adrress by Mr. W. T. Macoun, Dominion Horticulturist, on "The Potato and its culture." Mr. Macoun has had 28 years experience in experimental work at the Central Experimental Farm, Ottawa, during which period he has experimented with over 800 different varieties of potatoes. Many questions were asked the speaker at the conclusion of his address, and in this way many new ideas were gained by those present.

The financial side of the potato industry was then taken up by Mr. E. W. Jarvis, Manager of the Bank of Montreal, Woodstock, who gave an able address on "Potatoes and community finances." The branch of the Bank of Montreal, of which Mr. Jarvis is in charge, being situated in the midst of one of the most important potato growing sections, he is well qualified to know what standing the industry holds in the financial world.

A vote of thanks was tendered the speakers and the Convention adjourned at 9.45 p.m.

The Convention assembled for its third session at 9.00 a.m. March 23rd, Mr. J. E. Porter, of Andover, in the chair. The first business was the appointment of a nominating committee to nominate officers for the proposed Potato Growers' Association. The following were appointed as a nominating committee: Mr. W. W. Hubbard, Mr. C. N. Shaw, Mr. J. E. Porter, Mr. J. Bremner and Mr. T. W. Caldwell.

An address was then given by Mr. G. C. Cunningham on "Potato Diseases and their control." Mr. Cunningham, in the course of an interesting address, exhibited specimens of the different diseases which are most troublesome in our potato fields and cellars, and showed that with a more careful methods many of these diseases may be eliminated. He also showed that, basing his information on a survey made last season by himself and his assistants of the potato fields in many sections of the Province, the total losses due to disease, of the possible total crop were as follows: Blak-leg, 7% loss or 840,000 bushels, Rhizoctonia, 5% loss or 600,000 bushels, Mosaic disease, 10% loss of 1,200,000 bushels, Late Blight, 25% loss of 3,000,000 bushels, a total of 47% loss, or 5,640,000 bushels.

Mr. W. W. Hubbard next addressed the Convention on "Potato Growing and the Maintenance of Soil Fertility." This was a very timely and helpful address in view of present conditions, and was very ably handled by the speaker.

Mr. Hubbard was followed by Mr Guy G. Porter of Perth, with an address on "The Growing, Handling and Marketing of the Potato Crop." Mr. Porter is a member of the firm of Porter, Manzer, Ltd., one of the largest potato shipping concerns in the Province, and from the standpoint of his own experience with the grower and the buyers in the different markets, gave the Convention some very interesting ideas on the potato industry from seed to consumer.

The fourth session was opened at

(Continued on Page 438.)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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APRIL 4, 1916.

DATES OF ISSUE.

April	4-18
May	2-16
June	6-20

FIGHTING GRAIN SMUT.

We are now nearning the seeding season. Ere long the seed grain will be committed to the soil, there to sprout and grow and bear its kind. Shall the increase be ten, twenty, fifty or a hundred fold? We confidently look for a high yield, and providing climatic conditions are favorable a high yield we will receive if we do our part. Good, plump seed of high vitality is a big factor in getting the desired result. It makes no difference how much time we spend on the preparation of the soil or how fertile we may make it unless the seed we use is good we need not look for high class results. We have repeatedly referred to the value of good seed in the columns of the Maritime Farmer during the last year, and we have no doubt not a few of our farmers have put forth special efforts to grade the best portions of their grain for seed purposes.

Well, suppose the soil is fertile and well prepared and the seed grain well graded, the next precaution to take is to guard the seed against an infestation of smut. The spores of this parasatic plant live over winter on the seed grain, and when growth begins in the field these spores also begin to grow, and ere harvest time comes a lot of damage is caused.

Have you ever inspected your grain fields and noted the large munster of smutty, brownish black heads of grain. If you figure it up you will find like other farmers have found that smut takes a big toll off your labors. It is an enemy that you can and must combat if you would glean the best results. You may say: How can I combat the smut pest?

Treat you grain before you commit it to the soil as follows:—

Treating seed grain with formalin will positively prevent stinking smut of wheat, oats smut and covered smut of barley. Treatment with hot water is necessary to destroy the spores of loose smuts of wheat and barley, but this must be handled very carefully. The formalin treatment for the ordinary smuts, however, is cheap, easily applied and effective.

Formalin is purchased at drug stores at 50 cents to $1 per pint. It is a 40 per cent soultion of formaldehyde gas in water. Be sure that your druggist guarantees the strength. One pint will treat from 25 to 50 bushels grain.

Mix formalin with water at the rate of a pint to 40 gallons. Do not open the bottle until you are ready to use the solution. Spread the grain out on a clean floor or a canvass and sprinkle the solution over it with a common sprinkling can or other convenient means.

Shovel the grain over and over, adding solution as need until you are certain that every part of every kernel has been thoroughly moistened. Then shovel the grain into a heap and cover with sacks or canvas for an hour or so. This allows the formaldehyde, which is the active agent that destroys smut spores, to permeate thoroughly the whole mass and do its work.

Next spread the grain out and dry it so it will work well in a seeder. It is well to use the formalin solution to disinfect seeder, grain bags and other possible sources of smut infection.

Seed grain should first be put through a fanning mill so as to blow out all smut balls and loose smut, because frequently the solution will not soak through these masses of spores. If the grain is sown immediately after treatment, more should be used to the acre to allow for the swelling of the moistened grain.

SCREEN THE HOUSE.

Any man handy with tools can easily make the screens for the windows or doors that will serve the purpose of keeping out flies and mosquitoes. Of course, the proper thing to do is to keep the premises in such condition that mosquitoes and flies will not breed. But this is an ideal condition that is almost impossible to bring about entirely, especially on the farm. No man is doing himself and family justice when he refuses to spend the small amount of money necessary to buy screens for the doors and windows. Give this matter careful thought right now. It will certainly give you much comfort, and it is possible that it may save the life of some member of the family.

The rural mail carrier and the telephone have been the most potent agencies in revolutionizing farm life. They bring quick communication between the city and the farm home. They have banished the isolation and loneliness which were formerly the bane of country living and have brought to the farmer and his family the daily intelligence of both local and world affairs. The rural mail carrier often has a hard job in threading snow-covered or mud-covered roads, but he carrier with him untold happiness and sunshine to many a heart and home.

* * *

Scarce and high are all forms of plant food, owing to war conditions. Save and utilize all manure, ashes, leaves, compost, muck; order fertilizer before it goes still higher. Plough deeply, harrow well, cultivate thoroughly so crops can feed on what is already in the soil or that you put on it.

Som people seem to forget that their neighbors may be good people.

* * *

The good dairy farmer is never out of a job and that's a thing that thousands of people in the city would be mightly glad to boast of.

* * *

It was a philosopher that said: "A fool learns from no one; a wise man learns from everyone—even from a fool."

* * *

When a man has not a good reason for doing a thing, he has one good reason for letting it alone.

* * *

Good stock will put more profit into one's pocket than poor stock. Keep this constantly in mind, and make a determined effort towards improving the quality.

* * *

The farmer who breeds his mares this season is pretty nearly certain to be on the right track. The war is almost certain to have a decided effect in the way of reducing the world's horse population.

* * *

Dairying is more thoroughly studied today than ever before. It is being made a practical science by thousands of progressive farmers the country over.

* * *

Science is knowing, art is doing. Scientific farming is know-how farming. It is farming made easier, surer, more profitable, more attractive, through better knowledge of nature's forces and more co-operation among farm folk.

* * *

There are too many small gullies about over the farm. Brush, trash, rocks, poles and other material thrown into the gullies will aid in eliminating them. Throw some of these into the gullies and plough over them and don't let them form again.

* * *

A good job for a rainy day is cleaning out the poultry house. There is danger of the hens having a more objectionable place to roost in summer than in winter. Lack of ventilation, filth and mites are three things that the hen frequently encounters in summer.

* * *

The great advantages of dairying are that the products are always in demand at good prices, that the product is condensed and removes from the farm a very small quantity of fertility, the product is economical in delivery, and being a perishable product must be sold often, which means that the cash is realized a few days after it is produced. The fact that dairying furnishes a steady income throughout the year, along with the insurance above mentioned, commends it to the best farmers.

* * *

When, oh when, will politicians cease to put politics ahead of progress? Too often our politicians cater to the unprogressive class rather than to the wishes of those who are trying to build up our country. We have heard some politicians say that they would not touch the question of imposing a tax on dogs as a protection to the sheep industry lest they lose a few votes by so doing. It is not a decision in favor of the most good to the country. In the politician's mind it resolves itself to the thought: "Will I lose my position?"

A few no-good dog owners say that he will, the tax is avoided and a law is enacted while excellent in some points is almost as absurd in other points and consequently the profitable sheep business must suffer. "Are slave owners the best lawgivers on slavery?" was the pertinent remark once made by a noted statesman. The sheep business has for many years been the slave of dog owners and it has suffered under their lash. Are dog owners the best lawgivers on the sheep protection question?

Lack of Potash in Commercial Fertilizers.

(Continued from Page 413.)

ter of the soil is a factor in determining its lime requirements. For instance, a light sandy soil may contain much less lime than a heavy clay and yet the clay soil may be in greater need of liming. Furthermore, the form in which lime is present in the soil will determine the amount available for the correction of acidity.

Land Plaster or Gypsum as a Liberator of Potash.

Land Plaster is a sulphate of lime (i.e., lime combined with sulphuric acid). Unlike the aforementioned alkaline lime compounds, it is a neutral salt and therefore of no value for the correction of acidity. In fact, its use tends to increase acidity, sulphuric acid being the residue when lime is removed from the compound.

Land plaster, however, is distinctly efficacious in liberating soil potash, and, although also supposed to encourage potato scab, its use in small quantities, say 500 pounds per acre, may be recommended for the heavier types of soil. Larger applications are not usually advisable, since 400 parts of water are required to dissolve one part of gypsum.

Perhaps the greatest beneficial effect has been observed on clover, hence its application to clover preceding the potato crop might prove a commendable practice.

Undoubtedly the best means of employing gypsum is by sprinkling it on the floor and on the liquid manure in the stable. By combining with the ammonia, it conserves this valuable constituent of manure, its other properties being unimpaired thereby. In order to prove most effective, 75 pounds of gypsum should be used for each ton of manure.

In the manufacture of acid phosphate, the raw phosphate rock is treated with sulphuric acid to render the phosphoric acid soluoble. The lime liberated from the phosphate of lime in this process combines with the sulphuric acid to form gypsum; consequently Acid Phosphate contains nearly 40 per cent of gypsum. Where Acid Phosphate then is the source of phosphoric acid in the potato fertilizer, there may be no necessity for the application of additional gypsum.

Soda Compounds.

It has been noted, as a result of experiments, that where potash is deficient in a soil, there is a tendency for plants growing thereon to assimilate slightly larger amounts of soda than is usual under normal conditions.

However, the occasional benefits derived from the application of sodium salts (other than Nitrate of Soda) are doubtless largely due to the influence of soda in liberating soil potash.

Sodium Cloride. (Common Salt).

It is for this reason that applications of common salt to certain soils have been found to increase the yields of mangels and potatoes and to stiffen the straw of cereals. It is usually applied at the rate of 200 to 300 pounds per acre. A mixture of common salt with gypsum seems useful in retaining moisture in the soil. Either applied individually would be similarly effective.

Sodium Sulphate.

This sodium salt has been recommended as a liberator of soil potash, but as it is the chief occurring salt in the unproductive alkali lands of the west, we should hesitate to advise its extensive use.

Nitrate of Soda.

Nitrate of Soda is the most popular commercial source of nitrogen and may be made to serve the dual purpose of furnishing nitrogen and, indirectly, potash for crop requirements.

Precautions to be Observed.

It must be remembered that these measures for rendering soil potash available are to be regarded as temporary ones, devised to meet the exigencies of the present situation. Their indiscriminate and long continued use would surely lead to soil impoverishment and necessitate heavy potash fertilizing in the years to come.

A Fertilizer for Potatoes.

For reasons already stated, Nitrate of Soda and Acid Phosphate are to be recommended as fertilizers for potatoes.

440 pounds of Nitrate of Soda (15 per cent Nitrogen) and 1250 pounds of Acid Phosphate (16 per cent available phosphoric acid) would be equal to one ton of 4-10-0 goods.

Barnyard manure or green manure should be used in preparation for potatoes. Fertilizers are supplements to, not substitutes for manure.

Conclusion.

Finally, do not except fertilizers to take the place of cultivation and drainage.

Remember that crop production is limited by other factors than the amounts of available plant food in the soil. If it were not so, our crop yields could be increased an infinitum, in direct proportion to the quantity of fertilizers applied, and this we know is an untenable theory.

Prize Winners at the Kings County Seed Fatr

The annual Kings County Seed Fair, conducted under the auspices of the Sussex and Studholm Agricultural Society, was held in the Agricultural School, Sussex, on Saturday, March 18th, was without exception the best seed fair ever held in Sussex. The 1915 fair was a decided success and far outstripped its predecessors. The 1916 fair outclassed the 1915 exhibit very materially.

S. . Moore, Maritime Representative of the Seed Division, judged the grains, and F. L. Fuller, of Truro, Superintendent of Agriculturist Societies for Nova Scotia, placed the awards in the potato classes. Mr. Fuller in the course of his remarks explained to the exhibitors what to look for in the various types of potatoes, and laid particular emphasis on care in selecting exhibits for a seed fair.

Mr. Moore was well pleased with the quality of the grain sections and complimented the directors of the society for their interest in the Fair. He humourously referred to a matter that came to his notice at a Sussex Seed Fair several years ago. He said that in that particular year, although the list of names of the directors and officers occupied one page of the official prize list, only one out of the number had any exhibits at the fair. This year and last the directors were on hand with good exhibits.

At the afternoon session Prof. C. C. Cunningham, Plant Pathologist, delivered an address on the eradication of Club Root on turnips. Every seat in the basement of the Agricultural School was occupied by farmers who had come to hear how that pest may be destroyed, and they went away well satisfied with what they had heard. Prof. Cunningham has found by actual experiment that a proper rotation of crops and a liberal application of lime on infested areas will eleminate the disease. Our next issue will contain a full description of how the work may be carried on.

At the close of the address a vote of thanks was tendered to Prof. Cunningham for his timely address. The first prize samples of seed grain were sold by auction and realized the following prizes:—

White Life Wheat	$2.50	per bus.
Marquis Wheat	3.50	„ „
Six Rowed Barley ...	2.50	„ „
Banner Oats	2.75	„ „
Black Oats	1.25	„ „
Rough Buckwheat	1.75	„ „
Smooth Buckwheat ...	2.25	„ „
Field Peas	3.25	„ „

Following is the list of prize winners:—

Wheat, White or Red Fife.—1. W. E. Wallace, Penobsquis; 2. W. H. Venning, Sussex; 3. W. J. King, Smith's Creek; 4. J. H. Bowser, Rockville.

Wheat, any other variety.—1, W. H. Venning; 2, H. B. Parlee, Sussex; 3, T. A. Davis, Smith's Creek; 4, Leslie Walker, Sr., Millstream.

Barley, any variety.—1, W. H. Venning; 2, Leslie Walker; 3, H. B. Parlee; 4, W. E. McLaughlin, Sr., Millstream.

Oats, white, any variety.—1, H. B. Parlee; 2, A. J. Marr, Newtown; 3, H. S. Secord and Son, Penobsquis; 4, W. E. Wallace, Penobsquis; 5, T. A. Davis; 6, C. T. McIntyre, Sussec Corner; 7, H. McIlroy, Sussex Corner; 8, Leslie Walker.

Black Oats.—1, T. J. Davis, Smith's Creek.

Buckwheat, Rough.—1, H. B. Parlee; 2, W. H. Venning; 3, T. A. Davis; 4, E. Roy Raymond.

Buckwheat, Smooth.—1, H. B. Parlee; 2, T. A. Davis; 3, A. J. Marr

Field Peas.—1, T. A. Davis.

Garden Peas.—1, E. Roy Raymond; 2, A. J. Marr.

Beans, White.—1, H. B. Parlee.

Beans, Colored.—1, H. B. Parlee; 2, C. T. McIntyre; 3, E. Roy Raymond.

Field Corn.—1. H. B. Parlee.

Clover Seed.—1, W. H. Venning; T. A. Davis.

Timothy Seed.—1, W. H. Venning; 2, H. S. Secord and Sons; 3, C. F. McIntyre.

Potatoes, Green Mountain or Delaware.—1, E. Roy Maymond; 2, W. E. Wallace; 3, H. S. Secord and Son; 4, W. F. Mosher.

Potatoes, any long white variety.—1, H. B. Parlee; 2, Hugh McElroy; 3, H. Yeomans, Sussex Corner; 4, H. R McMonagle; 5, A. J. Marr.

Potatoes, any rose variety.—1, A. J. Marr; 2, C. T. McIntyre; 3, H. R. McMonagle; 4, T. J. Davis.

Potatoes, any round, white variety.—1, C. T. McIntyre; 2, H. B. Parlee; 3, T. J. Davis; 4, W. F. Mosher.

Potatoes, any dark skinned variety.—1, H. B. Parlee; 2, W. F. Mosher; 3, T. J. Davis; 4, A. J. Marr.

Turnips for seed growing.—1, R. F. McAulay, Sussex; 2, H. B. Parlee; 3, H. S. Secord and Son; 4, Hugh McElroy.

Grain from Standing Field Crops Competition, 1915.—1, H. B. Parlee; 2, W. H. Venning; 3, T. A. Davis; 4, H. S. Second and Son; 5, W. F. Mosher.

Summary of Total Winnings.

J. H. Bowser	$0.50
H. Yeomans	.75
W. F. Mosher	3.00
W. E. Wallace	7.50
Hugh McElroy	2.25
E. Roy Raymond	3.25
H. B. Parlee	33.00
R. E. McAulay	2.00
Leslie Walker	2.50
W. E. McLaughlin	.50
W. H. Venning	22.00
H. S. Second and Sons....	7.00
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Turn Waste to Profit.

Recently a proprietor of a large, modern business in a thriving city was heard to remark "my twelve months' trade shows, after allowing myself a low weekly income, not one cent of profit, on all the capital, risk and worry." He distinguishes closely between income and profit for the year.

Does the average dairyman consider his farm business in the same light, each department of its many activities, grain, poultry, lumber, pork, hay, milk? Further does he distinguish between income and profit when dealing with the herd? If (and much depends on that "if") each cow makes a good profit he is indeed well off. Even if each cow is responsible for a good income, things are not too bad. If some of your cows waste good feed because they are not possessed of ability to made milk economically, find it out; turn waste to profit. Make the cows keep you, that is their job; you need profit on the feed, profit to pay for your investment of capital; risk and worry, the same as any merchant. A letter to the Dairy Coommissioner, Ottawa, will bring you free of charge milk record forms, either daily or three days per month, feed records, and a herd record book. When you note down total production and closely estimate cost of feed by occasional weighings, you arrive at individual profit. Make each cow pay a good profit.— C. F. W.

Canadian Seed Growers Association Spring Catalogue.

The annual Spring catalogue of the Canadian Seed Growers' Association containing a list of the offerings of "Registered" and "Improved" Seed by members of the Association, has just been distributed. The catalogue gives the names and addresses of the growers, the kinds of seed and the quantities they are offering, the price per bushel asked, the percentage germination, the certificate number and certain remarks re quality of sample. A description of some of the leading varieties is appended, as is also an outline of the work of the Association and the System which is followed in the production of "Registered Seed."

Farmers desiring to procure high class seed at a reasonable price should write the Secretary of the Association, Canadian Building, Ottawa, Ont., for a copy of the above publication.

HORTICULTURE.

Apple Culture in New Brunswick in 1915 and the Outlook for the Future

By A. G. Turney.

Last year was very unfavorable for apple growing in the province. The spring was decidedly late, cold and wet with but little bright sunshine, and, as a consequence, orchards were from 10 days to two weeks later coming into bloom than usual—orchards generally showing bloom here by May 26th. The bloom was from medium to quite heavy and bore out the indications of the early spring for a good crop. Early varieties, and nearly all winter varieties, gave promise of as large a crop as that of 1915. Fall varieties bloomed somewhat less heavily than the others. The blooming season passed without frost injury but it was marked by decidedly unfavorable weather it being dull, wet and cold. These weather conditions prevailed throughout June, and as a consequence there was only a fair set of fruit and this was followed by a very heavy drop. Thus, early in June it was apparent that the apple crop would be light, and by the end of the month it was evident that it would be one of the smallest in the history of the province. In this respect, however, it is well to note that New Brunswick was no exception, the Monthly Fruit Crop Report for September, issued by the Federal Fruit Division, stating: "Taking the Dominion as a whole, it seems probable that the year 1915 will be long remembered as a year of a low production and poor quality." A few orchards yielded an average crop of really good fruit, but these were exceptional. The large majority of the bearing orchards produced but a light yield and the fruit was decidedly below the average in quality.

Harvesting took place under favorable weather conditions, and prices ruled very high for late fall and winter varieties. Good standard varieties such as McIntosh Red, Fameuse, Golden Russet and Bishop Pippin were in keen demand at prices ranging from $4.00 to $6.00 per barrel for No. 1 stock according to variety.

It should be remembered that such unfavorable weather conditions as prevailed in the spring and early summer of 1915 are more marked in the resulting poor fruit crop in provinces and section where fruit culture is, as yet, for the most part, conducted in a haphazard manner. Adverse weather conditions, favoring as they do the prevalence of fungus diseases, etc., together with the natural tendency of trees left largely to their own resources to bear heavy and light crops in alternate years, are being considerably offset by the application of that optimum combination of work, knowledge, and skill known as "modern orchard practice." Evidences of this are, as yet, only too few in New Brunswisk, but nevertheless they are here, and even this year some growers, through practice for years of modern orchard culture, were rewarded with a good crop of good quality and the highest prices in the history of the industry.

Properly viewed and considered, there is nothing about the fact of the low yield and poor quality of the apple crop of 1915 that should deter us from doing all we can to develop and extend apple culture in New Brunswick. The poor season has but served to emphasize the fact that it is the wide awake and intelligent farmer and fruit grower, the man who does not depend on the weather but who seeks by a proper application of work, knowledge and skill, to aid and offset it—it is he who reaps the advantage and profits of a good yield, good quality and high prices in a year when a general production and quality is below the average.

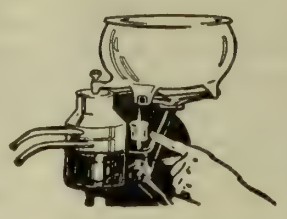
I would like to urge our fruit growers and farmers to plant more apple trees this year. The time was never more opportune and the outlook for profitable returns was never brighter. Maritime provice nurseries have large stocks of first class apple trees of varieties of proved merit for our climate, on hand, and prices are lower than usual. In this connection I would like to remind you that the New Brunswick Fruit Growers' Association, in its purchase of nursery stock for the members, is patronizing the local nurseries and in that way doing what it can to encourage them. Matters have now reached a stage where there is no longer any need or excuse for our people to send their money out of the province when purchasing fruit trees. First class stock of the best varieties of apple trees for this province, New Brunswick grown, may be procured from the Albert Nurseries, Albert, The St. John Valley Nurseries, Burton, Mr. John Jennings, Newburg Junction, and others. Then again, prices for late fall and winter apples were never higher than during the last few months, not only here, but in nearly all the Canadian markets, and the evidence of recent years shows only too clearly the great scarcity of any quantity of really first class late fall and mid-winter grown in the province. More and more every year our people are coming to appreciate the excellent quality of fruit, and where it can be had they are demanding it in preference to imported stock.

There is an increasing desire on the part of the farmers throughout the province to get their trees of early varieties grafted over to longer keeping fruit, and this a movement which the Department of Agriculture, through its Fruit Division, is doing all it can to assist. Too many trees of early varieties were planted in the past, and under conditions and in widely scattered locations which prevented co-operation in marketing. The result was that in some years we had gluts of early apples, and these discouraged our farmers to a considerable extent from taking proper care of their orchards and increasing their plantings. Since then, however, a considerable proportion of this acreage of early varieties has ceased to be a producing factor, and with the grafting over to later varieties of a considerable proportion of the balance, and with the newer plantings of longer season fruit, the prospects for apple growing in New Brunswick are brighter than they were ten and fifteen years ago.

Bridge Grafting Fruit Trees.

Bridge grafting (the use of scions or small limbs to connect the cambium above and below a large wound or girdled strip) may be practiced successfully on almost any kind of fruit tree that can be propagated readily by grafting. It is used more often with the apple than any other fruit, but pear trees often are treated in this way. There seems to be no reason why the method should not also be successful on plums and cherries, according to farmers' bulletin No. 710. Peaches, however, graft less readily and there may be some question as to the usefulness of the method in the case of this fruit.

Mechanical injuries which may be remedied are usually inflicted by animals, by burrowing insects or by implements carelessly used. Various diseases, such as pear blight, also cause local injuries which may call for bridge grafting. The trunks of pear trees are not infrequently completely girdled and killed by pear blight. Bridge grafting, if done in time, however, may save the tree. The method also is useful when large acreas of bark have been killed by sum scald or other troubles. Protection of trees against rabbits and mice and disease is, of course, better than having to



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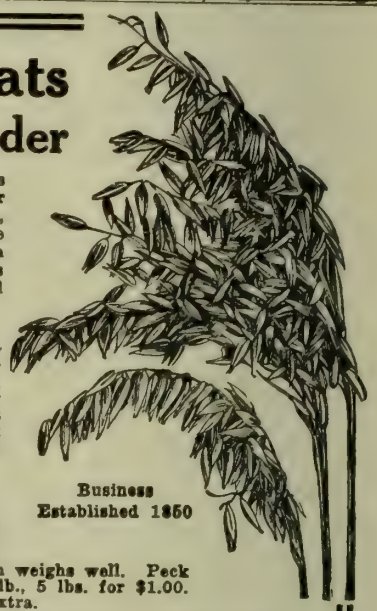

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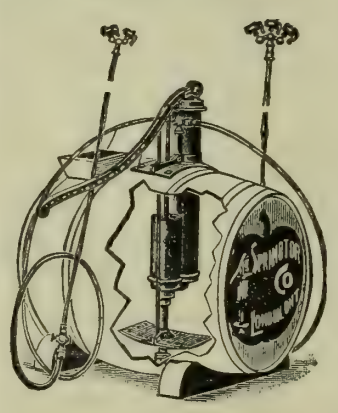

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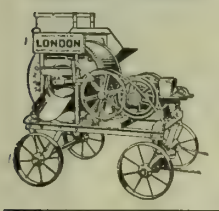

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bridge graft to overcome damage.

How to Bridge Graft.

To be effective, bridge grafting should be done in the spring before growth starts, though sometimes it can be done after growth starts if dormant scions for the purpose can be secured. Prepare the wound in the tree by cutting away all dead tissue and thoroughly cleansing the injured parts. If possible, sterilize by washing with a solution of bichloride of mercury, copper sulphate, or some other antiseptic. The irregular edges of the bark above the girdled tract or wound should be cut back into an even edge, far enough from the wound to make certain that healthy cambium is under the bark.

For the grafting, select scions from wood of the previous season's growth, either branches which grew the preceding season of water sprouts that are only a yearold. The scions should be a little longer than the space which is to be bridged, so they will arch slightly over the central part of the wound.

Bevel the scions at each end on the same side of the scion with a long sloping cut, so that the wedged-shaped ends thus formed will be relatively thin and permit their long thrust well under the bark without danger of separating it unduly from the cambium at the points of insertion. The placing of the scions will be facilitated if the bark at the margins of the wound is slit for a short distance at the points where the ends are to be inserted.

Importance of Uniting Cambium.

In placing the scions it is of the greatest importance that the cambium of the scions which is exposed in the sloping cuts at the ends be brought into intimate contact with the cambium that lies under the bark at the margins of the wounded area. The union of scion and tree can accur only where the cambium layer of the two come together. The scions may be secured in the proper positions, if need be, by driving a small nail through each end into the trunk. This will aid in drawing the cambium of scion and trunk closely together.

The operation is completed by thoroughly covering the area occupied by the ends of the scions and the margins of the wound with grafting wax, strips of waxed cloth, or by some other means that adequately will prevent these parts from drying out. Some operators cover the entire wound, scions and all, with melted wax.

Where the wound is so large as to make ordinary bridge grafting impossible, another method of bridging may be used. Two-year-old trees are planted about the base of the injured tree and their tops grafted into its trunk above the girdled space, which has first been cleaned as in the other method. As the tops of the small trees are too large to manipulate readily in the manner described for scions, V-shaped vertical grooves extending through the cambium are cut just above the wounded area in the bark of the trees to be treated. The tops of the small trees are shaped to correspond with these grooves. The two are then accurately fitted together in such a manner as to bring the cambium of one into contact with that of the other. Small nails may be driven through the tops of the trees into the trunk, to hold the parts firmly together. The wounds incident to joining the tops of the small trees to the trunk of the large one should be well covered with wax, to prevent drying out.

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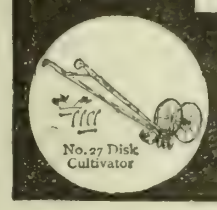
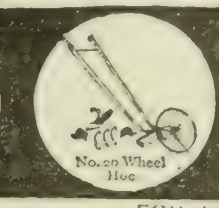
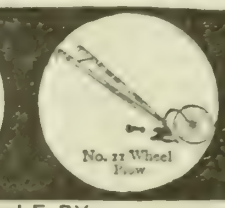
Ask your dealer to show them or write for booklet "Garden Tools of Modern Tools." Also, for horse hoes, harrows and cultivators, sprayers, etc.

The Bateman-Wilkinson Co., L't'd 432 Symington Ave. Toronto, Ontario.







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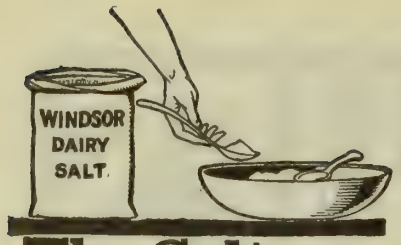

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THE CANADIAN SALT CO. LIMITED 179

DAIRYING.

A Practical Plan for Keeping Cream in Good Condition on the Farm.

By H. C. Beckman, Manager, De Laval Department of Dairy and Creamery Improvement, Chicago Office.

One of the interesting problems worked out by our Department of Dairy and Creamery Improvement during the past year has been the proper care of cream on the farm. A very large percentage of the users of hand separators through lack of proper facilities, and to some extent, also, through lack of a proper understanding of the requirements, do not deliver their cream to the creamery or cream buyer in as good condition as it should be to insure the greatest amount of profit possible for the product.

It goes without saying that good butter cannot be made from poor cream. Poor butter is not only a drug on the market, but even then must be sold at a sacrifice in price. The price the farmer receives for the cream is directly dependent upon the price for which the butter made from this cream is sold.

Cream Should Be Held at Proper Temperature.

There are a number of factors that affect the quality of the cream, but by far the most important of these is the temperature at which the cream is held. Were it possible to deliver the cream every day or say four times a week, this would not require so much attention, but it is out of the question for a farmer living from five to twenty miles from the creamery or railroad station to deliver his cream every day, or even every two or three days.

Cream Can Easily Be Held for a Week Under Favorable Conditions.

Cream produced under reasonably sanitary contditions can easily be kept in first-class condition for three or four days or even for a week if it is held at a temperature low enough to prevent bacterial development. Souring or spoiling of cream is due almost wholly to the action of the bacteria present in all cream. These bacteria are in reality extremely small plants, and like ordinary plants, they grow or propagte more rapidly in a warm temperature than they do in a cold temperature. Below a temperature of 40 degrees this bacteria life is practically at a standstill. At 50 degrees there is some development, but it is not until a temperature of 60 to 70 degrees is reached that the bacteria really begin to develop in earnest.

Cream Should be Kept Below 60 Degrees

In a sample of milk held at a temperature of 50 degrees there were at the end of 24 hours, 7 bacteria for every one at the beginning. In a sample of milk held at 70 degrees, there were at the end of 24 hours, 700 bacteria for each original one. At the end of 48 hours there would probably have been approximately 10,000 times as many bacteria in the can held at 70 degrees as in the can held at 50 degree. Below 60 degrees the development is comparatively slow, but above 60 degrees the development increases by leaps and bounds, therefore it is very desirable to keep the cream below 60 degrees, if possible.

Well water as a rule has a temperature below 60 degrees, so the first thing that suggests itself is that if we could keep cream at the temperature of well water, nine-tenths of our troubles would be over. Some farmers do keep their cream in cans hung in the well, but this is not only a lot of bother, but the air in the bottom of the well usually has a stale, dank odor which the cream takes up.

Tank Developed by the De Laval Company to Hold Cream at Proper Temperature

The thermos bottle and fireless cooker have during recent years demonstrated that keeping cold water cold or hot water hot is merely a question of insulation. We, therefore, conceived the idea that if it were practicable to construct a tank that was perfectly insulated on top, bottom and sides and connect it up so that all the water used on the farm for stock, etc., would flow trhough this tank, the water in the tank would always be at practically the temperature of well water and a can of cream kept in it would be held at sufficiently low temperature to keep it in good condition for several days.

With this in view, the De Laval Department of Dairy and Creamery Improvement had made a dozen or more different types of cream storage tanks to be tried out. These tanks cost all the way from a few dollars apiece up to as high as $160.00. Careful tests were made to note the efficiency of each tank for holding the temperature of the water with a can of cream set in it. We soon discovered that in the tanks not properly insulated against heat, the influence on the quality of the cream was not appreciable.

Cream Tank Constructed on the Same Principle as the Thermos Bottle

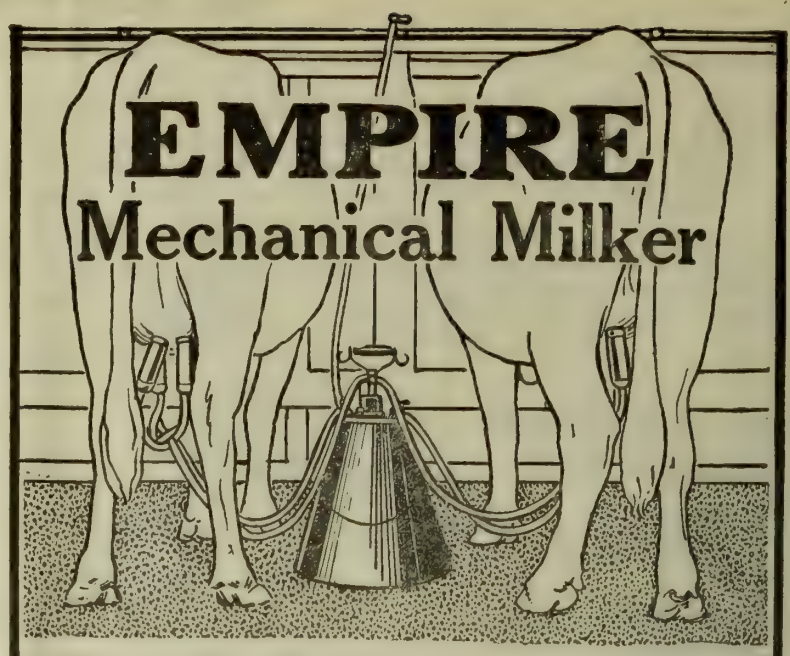
On the other hand, in those tanks that were scientifically insulated with granulated cork, felt, etc., in proper proportions, there was but very little change of temperature in the water. A ten-gallon can of cream kept in a tank a week with the atmospheric temperature averaging over 100 degress in the day time and 85 degrees at night showed a temperature of 59 1-2 degrees at the end of the week.

As a result of our experiment, we had 50 tanks made up of a type which were moderate in first cost, simple, durable and convenient to take care of and yet possessing all the necessary heat excluding properties. Twenty-five were furnished to the patrons of creameries in South Dakota and 25 to the patrons of creameries in Oklahoma. These tanks were put out under the supervision of our Dairy and Creamery Advisory Experts and the performance of each tank was carefully watched. The results were most gratifying. Farmers who before they had these tanks were furnishing the poorest cream, immediately began furnishing the best cream. Buttermakers were astounded and could hardly believe their own eyes. In one case cream was kept perfectly sweet for over one week during a period of very hot weather.

Why Wise Garmers are on the Dairy Cow's "Pay Roll."

Myron Townsend, New York, writing in the De Laval Monthly, says:—

Consider the dairy cow as a wealth



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Milks them more Regularly and Uniformly—
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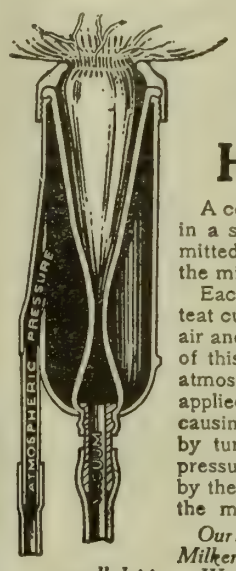
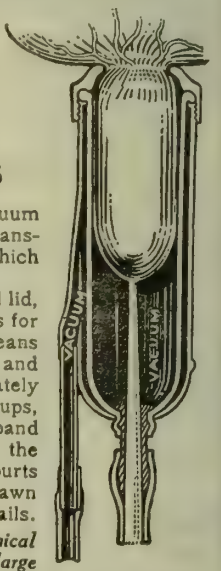
What it Accomplishes

One man with one double or two-cow unit will milk 20 to 30 cows per hour—one man can operate two double units. An Empire Mechanical Milker will quickly pay for itself with even a very few cows. With one or two double units you can handle a good big herd alone, and do it quickly and easily.

The "Empire" so successfully imitates the action of a sucking calf that it is easier on the cows than hand milking, and usually gets more milk. Flowing directly through the tubing from the closed teat cups to closed pails, the milk is always protected from stable air, dirt and germs



Thus, the "Empire" gets more and better milk, saves time and wages, and solves the serious problem of hired help.



How It Works

A compact air pump creates a vacuum in a steel tank. This vacuum is transmitted along the stalls by piping, to which the milking units are connected.

Each unit consists of a pail, a pail lid, teat cups complete with connections for air and milk, and a Pulsator. By means of this Pulsator, vacuum (suction) and atmospheric pressure are alternately applied to the linings of the teat cups, causing them to collapse and expand by turns, massaging the teats by the pressure, then drawing the milk in spurts by the suction. The instant it is drawn the milk flows into the closed pails.

Our literature about the Empire Mechanical Milker is of interest to owners of either large or small dairies. We will send it to you on request without any obligation to you. Just write us saying, "Please send me information about Empire Mechanical Milkers". Address Dept. L 31

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The Eureka line of Potato Planters is the largest manufactured. This machine takes only *one* man to operate it. That means less trouble and expense for *you*.

Opens the furrow—drops the seed any distance or depth required—puts on fertilizer (if desired)—covers up—marks for next row. Always accurate and automatic.

It's an easy machine to operate. The steel and malleable iron construction mean lightest possible weight and increased life of machine. Your repair bill will be practically nothing. Plants uniform depth at *all* times because plow is directly under the axle. Dropping mechanism in plain view of driver. Does not injure seed.

We supply planters in three sizes, for one or two rows—with or without Fertilizer Attachment.

For 16 years the Eureka Potato Planter has been successfully used throughout the world.

We also make Eureka Potato Cutters and the Eureka Mulcher and Seeder—a mulcher, smoothing harrow, cultivator, weeder, seeder.

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FROST & WOOD CO., Ltd., St. John, N. B.

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Box 745
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Bowker's Fertilizers

Ask Canadian Local Agents for prices, or write us

Bowker Fertilizer Co.
BOSTON

Grow Strawberries

They give the Quickest, Biggest and surest PROFITS of anything you can plant.

The work is so simple and easy that even beginners make big profits from the start.

AMERICUS EVERBEARING

plants produce big crops of big fancy berries from June until frost, in fact light freezing does not affect their Fruiting. The Berries are in great demand. Three months after plants are set, your profits begin. Our FREE BOOK, tells the rest. Write for it to-day.

DUPUY & FURGUSON,
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Bulbs--50 High grade flowering bulbs, Gloxinias, Begonias, Oxalis, Gladiolas and other kinds also asparagus fern; all postpaid, 25c. Pine Tree Nursery, Pemaquid, Me.

producer! Her other name is "ready cash!" From her such sources of revenue as butter-fat and skim-milk flow!

Who but the cow is the originator of the "cream check" Animated machine though she be, the consumer of his silage and his roughage, isn't she the one friend of the farmer that fattens his bank account twelve months in the year? Nor is this all! She is the mother of the calves and the sole author of the sustenance from which they are fed the first months of their lives. Few cow owners appreciate how valuable her warm, sweet skimm-milk is for the young stock of the farm!

And the yellow butter-fat! What is it but so much gold! Even after the De Laval Separator extracts the butter-fat from the whole milk all the bone and muscle forming elements are left. How warm, sweet separator skim-milk makes the calves, the pigs, the chickens grow! And it comes from the cow!

For every dollar's worth of fodder fed her she returns 100 per cent in dividends. Instead of robbing the soil of its fertility by selling off your produce feed it to the cow!

Then the solid and liquid wastes from her body! Do they not keep up the fertility of the soil? In converting hay and grain and grass and silage into milk and money isn't the manure her most valuable by-product? What a boon the dairy cow is to the impoverished soils of "run-down" farms that lack many of the elements that make plant life flourish.

Who ever heard of an "abandoned dairy farm" where a good Separator was on duty removing the butter-fat, after which the warm, sweet skim-milk was fed to the calves or the pigs?

But there is still another source of revenue from the dairy cow. Even her old, worn-out body, about to succumb to wear and tear, has its market value! Her carcass can be sold to the butcher and her hide to the tanner!

Farmers are deeply indebted to the dairy cow! They are on her "pay roll! She furnishes them a steady cash income in fat months and in lean and she makes their fields more fertil and porductive.

Blessed be the cow! How could the world live without her? What a blessing she is to babies and how indispensable she is to adults! Consumers of diary products—men, women and children everywhere—echo the sentiment: blessed be the cow! All people pay homage to the source of their sustenance, to their humble servant, the uncomplaining cow! Benefactor of all mankind!

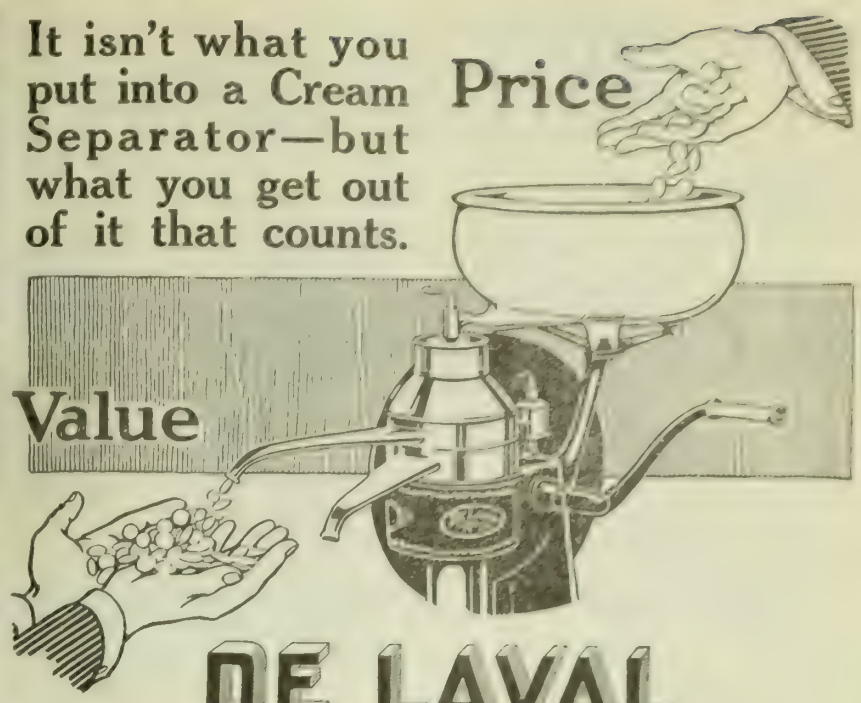
And how much the cow contributes to the wealth of the community! Her ver presence makes the mother earth more productive. She not only tends to elevate and enrich her owner but she furnishes food for his family and he sells the surplus to his neighbors. Cash circulates more freely and merchants feel the stimulus of such a steady flow of milk-money! No cream check, no cow!

Few men who form partnership with the cow ever complain of hard times! If they treat her kindly and develop her milk producing possibilities intelligently they never consort with the chronic calamity howlers who outrage nature by bankrupting their soil with grain crops and then blame failure on the political party in power!

Pages and pages could be written in praise of the dairy cow! But "So, Bossy" needs no lengthy elogium.

Her name is so linked with prosperity in the minds of farmers, bankers and merchants that her achievements, alone, entitle her to first place in the hearts of those who follow agricultural pursuits for their livelihood.

It isn't what you put into a Cream Separator—but what you get out of it that counts.



DE LAVAL
Cream Separators are by far the most economical

REAL economy is never short-sighted. It never confuses PRICE with VALUE.

PRICE is what you pay for an article—what you put into it.

VALUE depends upon the amount and quality of service the article gives you—what you get out of it.

You get by far the greatest actual VALUE for your money when you buy a De Laval—BECAUSE it will give you much better and longer SERVICE than any other separator.

From the standpoint of its greater durability alone the De Laval is the most economical cream separator to buy, and when you also take into consideration its cleaner skimming, easier running, greater capacity and less cost for repairs, the price of the "cheapest" machine on the market is most exorbitant compared with that of the De Laval.

And there is no reason why you should let its FIRST COST stand in the way either, because the De Laval may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

A De Laval catalog to be had for the asking tells more fully why the De Laval is the most economical cream separator, or the nearest local De Laval agent will be glad to explain this and many other points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

De Laval Dairy Supply Co., Ltd.,

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Seperators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

$15.95 Upward **SENT ON TRIAL**

American CREAM SEPARATOR

Thousands in Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish **a brand new, well made,** easy running, easily cleaned, perfect skimming separator for **only $15.95.** Skims **one quart of milk a minute,** warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl **is a sanitary marvel** and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You Our wonderfully low prices and liberal terms of trial will astonish you. Whether your dairy is large or small, do not fail to get our great offer. Our richly illustrated catalog **sent free of charge** on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world.

Shipments made promptly from Winnipeg, Man., St. John, N. B., and Toronto, Ont.

Write to-day for our catalog and see what a big money saving proposition we will make you. Address

AMERICAN SEPARATOR CO., Box 1212 BAINBRIDGE, NEW YORK

LIVE STOCK.

Lambing Notes.

At lambing time the shepherd should be provided with one or more assistants, according to the size of the flock and the work to be done. An assistant should always remove and bury the afterbirths, and also skin and bury the carcases of dead ewes and lambs not required for dogs' food. All post mortems, too, should be made by an assistant under the shepherd's directions, so that the latter's clothes and person may be kept as free from taint as possible, lest he convey disease to those ewes that need his assistance. For the same reason a separate assistant should feed and look after contagious cases under the supervision of the shepherd, and such assistants should have little or nothing to do with the healthy ewes and lambs, or disease may be spread broadcast. Disinfectants should be freely used in and about the lambing yard, and the shepherd should be careful to wash and disinfect himself and his instruments after attending a bad case. All vessels used for milk, medicine, etc., need to be kept as clean as possible, and every hygiene measure taken to ward off and curtail disease at this critical period. In spite, however, of every care and precaution, certain ailments are sure to be present at lambing-time, and as veterinary assistance rarely sought unless an epidemic prevails, the shepherd or flockmaster should be provided with suitable remedies for use when required; but, as special knowledge is needed for compounding drugs, it is better to let a chemist prepare all but the simplest mixtures, or to buy suitable remedies from a well-known make of veterinary medicines.

One of the duties of the shepherd is to assist those ewes that need aid. As a general rule he is in far too great a hurry to lend this assistance, and the ewes would do bteter and there would be less "inflammation," and a lower mortality, if he could be induced to let them alone. Flock-owners should impress on their lamber that assistance should never be premature or too hurried. Different ewes occupy different times in delivery, and cold weather protracts labour. The amount of time that has elapsed since labour began is of less importance than the indications of need for assistance. These are principally increasing weakness and protrusion of the tongue, with a black colour of the organ. Instead of the "grease or oil for the lubrication of the passages, instruments, and hand in aiding delivery," a ple supply of carbolised oil should be provided for this purpose. In the arrangement of lambing sheds or yards it is most desirable to provide a hospital pen, near to, but not communicating with the main erection, to which bad caess can be at once removed and receive separate attendance. Another point worthy of attention is the removal of soiled litter; it is not sufficient to cover bedding that has been contaminated by uterine discharges with a thin layer of clean straw. Dead lambs and foetal membranes should always be promptly removed from the vicinity of the lambing sheds; nothing is more common than to see old "cleanses" lying about the main yard, and, of course, nothing could be more unsanitary. The shepherd should not be permitted to make post-mortem examinations or to flaw dead ewes or lambs before adopting precautions, and from the outset carbolised oil should be supplied to the lamber and freely used as a lubricant in all cases requiring assistance, as well as for anointing the umbilicus of newly born lambs. When a case of parturient septicaemia, puerperal fever, metritis, peritonitis, "heaving," "inflammation," or any other disorder incidental to the lambing occurs, the animal should be promply isolated and receive separate attendance. There are a great many disinfectants available for general use, apart from the local employment of carbolised oil, and but for its highly poisonous character a solution of perchoride of mercury would be best. Crude or commercial carbolic acid is most frequently employed on account of its efficiency and cheapness, but the several akaline solutions of coal tar, sanitas, and other proprietary preparations are, perhaps, somewhat more convenient, less dangerous, and quite as efficient.

"Joint-ill."

Another reason for the free use of antiseptics and the adpotion of sanitary precautions, is the effect they have in preventing joint-ill and navel ill in the lambs. These are still popu larly regarded as two distinct maladies, and the swollen joints are supposed to be of rheumatic origin and due to exposure to cold and wet. This exposure may aggravate matters, but the disease is now fully established to be pyaemia (blood poisoning). The two conditions are invarialby associated, and there is but little doubt that the umbilicus, which immediately after birth is practically an open wound, is the point of entry for septic matter.

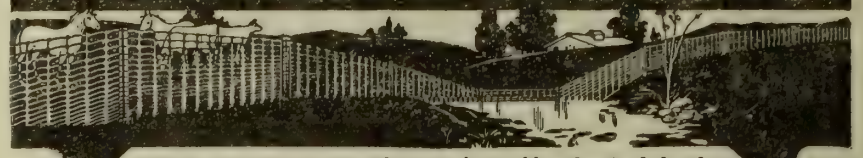
if cod-liver oil (as used for stocks) is procured it will be found excellent for weakly ewes or lambs if given in suitable does. For suckling purposes ewes' milk is undoubtedly the best, but as the supply is limited recourse is generally had to cows' milk. The milk from one cow only should be used, as mixed milk is apt to upset the lambs' stomachs. Personally I prefer the milk of a recently-calved animal, but some people think it is best for the cow to be in-calf again, others that a heifer's milk is best, but all will, I fancy, agree that milk from a stale-milched cow, or one that is in service, is not suitable for young lambs. The milk should be given at the same temperature as when it is fresh-drawn, care being taken that it is not sour or burnt, and that the milk-vessels are all sweet and clean, or the lambs will probably suffer from diarrhoea of an intractable nature. Ewes while suckling their lambs should get a good allowance of hay, oats, bran, and chaff, in addition to roots, grass, or other green food, for, unless well fed, they cannot be expected to milk well, and the lambs will suffer in consequence. As soon as the lambs are old enough to eat they should be supplied with some good linseed-cake broken small and placed in troughs land rather than among mountain out of the ewes' reach. On pastures this can be done by surrounding the lambs' troughs with hurdles provided with creeps for the lambs to pass through; if the flock are in hurdles the troughs can be placed out side the fold, and creeps arranged for the lambs to run forward.

E. H. S., in English Exchange.

Heaving or after pains in Lambing Ewes.

"Heaving" occurs apparently as an epizootic; but, in common with other otubreaks affecting a number of animals at one time, this may as readily be due to exposure to similar conditions as to feeding and management as to contagious or infection. We find it more prevalent in the south than in the north of England, among low-breeds, and in those flocks receiving turnips or artificial foods rather than those having to search for their living. I have seen high feeding suggested as a cause of straining. Want of exercise has something to do with its production; thus it occurs in ewes fed on turnips or luxuriant pasture, such as does not necessitate the animal walking about much to obtain a sufficiency. Though to a certain extent "heaving" is a healthy operation of nature, it often passes the bounds of health and becomes disease. There is no manner of doubt that the straining, often sufficiently severe to cause inversion of the uterus, or vagina, arises from violent contraction of the womb in the effort of nature to restore it to its natural size. There seems nothing about the disease to warrant the conclusion that it is infectious. The

UNDER WATER 4 YEARS AND NOT RUSTED



Think of it! A galvanized fence so thoroughly galvanized that four years of submersion—summer and winter—could not faze it. That's Mr. Cummings' experience with Peerless Fence. Read what he says. Here's his letter.

Gentlemen—I have handled your fence for four years and find it a good, strong and durable fence, and find that the galvanizing is first-class. In referring to this I have a fence that I put on four years ago across a gulley and the water is as high as the second wire and it is not rusted nor broken yet. I have a team of heavy horses that ran into the fence last summer and did not break or damage it in the least, and I am glad to say that in the four years I have handled your wire I have had no complaints about it.
Yours truly, DAVID CUMMINGS, Bowesville, Ont.

Increditable—unbelievable—you say? Not when you remember that

Peerless Perfection Farm Fencing

is different—that it is made of Open Hearth Steel Wire. The Open Hearth process burns all the impurities out of the metal, thus removing one of the greatest causes of rust. The wire is also galvanized so thoroughly that it will not flake, chip or peel off. Every intersection of the wires in our farm and poultry fence is locked together with our Peerless Lock. While these locks hold the wires securely together, this fence can be readily adjusted and perfectly stretched over uneven ground. It is easily erected and on account of heavy, stiff stays used, fewer posts are required. Get the details. Send for free literature. It also describes our farm gates, poultry fencing and ornamental fence.

Agencies nearly everywhere. Agents wanted in unassigned territory.

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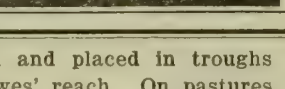
We gladly quote prices on any water system or pumping system required.



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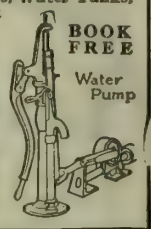

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It turns easier, clips faster and closer and stays sharp longer than any other. Gears are cut from solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style, easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade. Price complete $9.25.

PRICE $925

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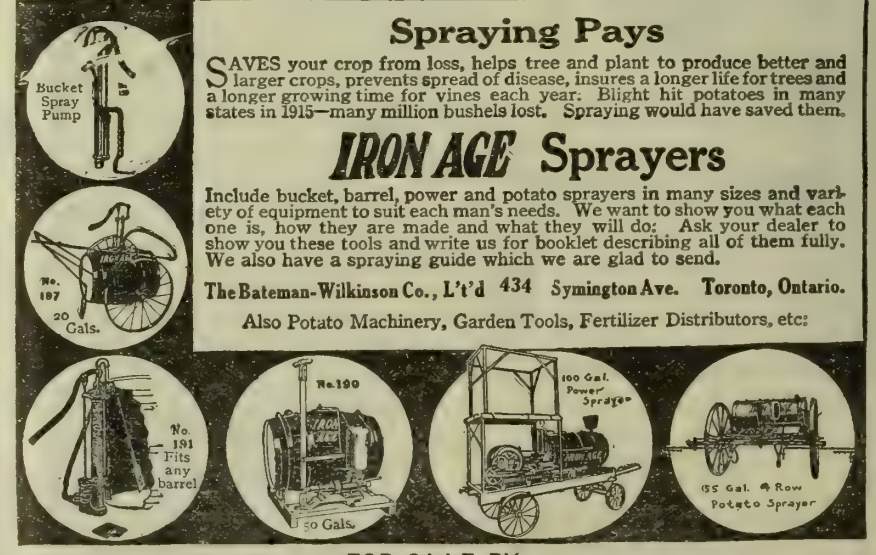
Include bucket, barrel, power and potato sprayers in many sizes and variety of equipment to suit each man's needs. We want to show you what each one is, how they are made and what they will do. Ask your dealer to show you these tools and write us for booklet describing all of them fully. We also have a spraying guide which we are glad to send.

The Bateman-Wilkinson Co., L't'd 434 Symington Ave. Toronto, Ontario.

Also Potato Machinery, Garden Tools, Fertilizer Distributors, etc.



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If you are troubled with Headaches, Dyspepsia, Biliousness and kindred sickness you can't expect to accomplish much.

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HERBINE BITTERS

that "True Blood Purifyer" has been proved, during the last fifty years, to be the one best remedy for those diseases.

25c. a bottle at your store Family size, five times larger, $1.00.

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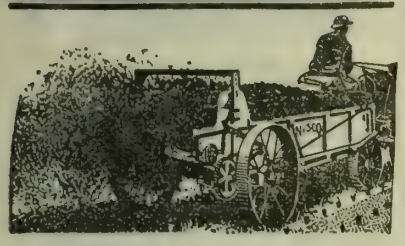
Dr. Wilson's Deadshot Wormstick in candy form for children. A sure and never failing cure. 6



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It puts farmyard manure in an entirely new light. In its six chapters there is not an uninteresting paragraph and every suggestion is practical. It shows the losses of the manure pile and of ordinary methods of spreading.

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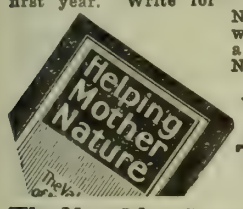
earn their cost and pay a profit the very first year. Write for "Helping Mother Nature" and we will send as well a booklet about Nisco Spreaders.



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SHAW'S SCHOOL, Toronto, Canada
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absence of inflammation has been demonstrated by examination of specimens of uteri removed from ewes killed in the early stages of the disease, and it seems that metritis occurs in "after-pains" as a result of progress or neglect, and not in the initial stage.

The Symptoms.

It generally affects the best ewes, carrying off the pride of the flock at a rate varying from 4 to 20 per cent. of the whole. It may follow either an easy or difficult labour, but most commonly affects those in which it has been natural, and the lamb yeaned without difficulty. It usually appears about the third day after lambing, and the first symptom is generally the passage of high-colored urine, with severe straining. If this goes on long, the breathing becomes quickened, the ewe lies about, refuses food, and neglects her lamb. There is not at first so much fever as in inflammation of womb, but soon the symptoms become indistinguishable from it. Pressure over the loins causes yielding, the hind parts swell, there is pain and difficulty in moving if forced to do so, and the urine passed is contaminated with uterine evacuations. Complete loss of power, constant recumbency, dullness of the eyes, and drooping of the ears show mortification to have taken place, or death results from absorption into the blood of purulent products.

Prevention and Treatment.

Prevention seems to be possible by feeding judiciously. enforcing sufficient exercise, and avoiding extreme plethora. The opposite, of anaemia or debility, mus, of course, be equally avoided, lest a worse thing come upon us in the shape of the many diseases following in the train of this condition. The free use of carbolic oil at lambing time, by anointing the parts and the hands of the lamber in those cases requiring assistance, an dpouring a small quantity into the pudenda in those that yean naturally, is to be commended, not only on account of the antiseptic properties of the oil, but because it has a sedative action also.

Treatment consists in the administration of sedatives, but early resort to diffusible stimulants is necessary to prevent sinking of the patient. At the first sign of straining or heaving another injection of carbolised oil should be given, and the following mixture is recommended: Tincture of opium, ½ oz., spirit of camphor 5 drachms, in gruel. This should be repeated in half doses in two to four hours. As a stimulant, give a mixture of ether, sal volatile, and sweet nitre, of each 1 drachm, in ale. Epsom salts is sometimes administered, and bleeding resorted to, but these should only be attempted in the early stages.

E. C. S.

Folding Preginant Ewes.

Experience goes to show that an exclusive turnip diet, or even a system of management where many turnips are given without compensating dry food, or run at pasture, is quite incompatible with "luck" at lambing-time. A little search through works on sheep management and diseases, both technical and popular, or the agricultural journals, will afford abundant evidence of bad lambing-times that have been distinctly traceable to the excessive use of roots in seasons when roots have been unusually abundant—so much so that it has passed into a proverb that "a good root year means a bad lambing year," or "yeaning-time." This is not mere theory, for from time to time we get placed on record the experience of practical men as to the effects of a great quantity of roots on in-lamb ewes. The mischief is not confined, in the case of pregnant animals, to the effects of a full quantity of watery roots on the system of the ewe, but

(Continued on Page 434.)

See this Bow Lever

Light rigid steel frame. Bolted trunnions. Roller bearings. Best finish throughout

THIS is a special feature of the Maxwell "Favorite" Churn. No other churn has it. You can adjust the handle to centre, right or left, whichever is easiest for driving.

Maxwell

"FAVORITE" CHURN (with Bow Lever)

—makes churning a pleasure. It's so simple to drive—requires so little effort to produce the butter. Agricultural Colleges and Government Inspectors recommend it. Used in Denmark, Australia, New Zealand, S. Africa, and all over Canada.

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Separator Satisfaction

Every "Superior" Separator bowl spindle has our patented ball-and-socket bearing, assuring an absolutely self-balancing bowl; also a much improved oiling system; and an instantaneous gripping crank clutch. In addition, the

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uses a greatly improved disc skimmer of the type developed by the DeLaval Company, and now used by all the most successful Separator manufacturers. So that the "Superior" is not only the cleanest skimmer and the easiest to operate, but the cost, too, is very moderate for a high quality Separator. It is the best all-round Cream Separator on the market to-day.

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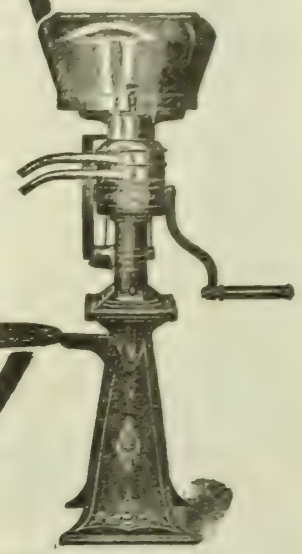

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S-W. Screw Process Linseed Meal

is the great protein food for milch cows. It contains 36 per cent. of the element necessary to properly balance the ration of the milk producer. Keep your stock healthy and happy by feeding S-W. Screw Process Linseed Meal. Assure yourself of more and richer milk by means of this protein-laden feed. Our booklet tells how and why. Write for it today and ask for prices.

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THE HORSE

What some Horses said to their Master.

This is what some horses said to their masters at the close of the day's work:

Jim:—Good master, there is a sore on my hip. I cannot see it, but when the line rests on it, or the whip hits it, it gives me great pain. Will you please see what causes it and try to cure it? It may be from a nail in the floor. Would you also give me a little thicker bedding? Then try me without a whip. A few more oats and a little less work will do more than the whip.

White Face: — My master, why did you strike me on my face today when my feed-bag fell off? I did not get half my dinner, and was it my fault or yours that it was not properly fastened on?

Star:— When you send me out on the grocery team tomorrow will you please tell the boy who drives me not to make it harder for me by taking on a number of boys, using the whip all the time, and fairly racing me over my route?

Sam:—Master, when Tom and I were doing our very best to draw that heavy load up that steep hill, why did you continually jerk the reins, whip us and keep calling "gid up," "gid up?" And when we saw where we could have a better foothold, instead of jerking us from one side of the road to the other, why did you not let us take it?

Ned:—When I was frightened almost to death yesterday and tried to escape, which is just what you would have done in such a fright, did it make me less frightened to be whipped and yelled at, and cursed for it? You only made it harder for me, when a kind gentle word and a soothing touch of your hand would have quited me and made me feel that you were my friend and would have saved me from danger. Why my master did you not give them?

Dick:—I do not like to complain, but if on a cold winter morning you would warm the bits before putting them in my mouth, I should feel much more comfortable. I once knew a master who always did that for his horses and they appreciated it.

Lady: — Will you please, kind master, loosen my check rein, especially when I am going up hill? All horses could keep up their gait longer and more easily if checkreins were looser. Please try it when I go out again with the carriage.

Old Jerry:—You have been a good master to me for many years, and I have tried to be faithful to you. But I am old now and feeble and must soon die I want to thank you for all your kindness and am sure you will do as well by your other horses as you have by me. We horses appreciate kind treatment, and each one of us wishes to do the very best he can for his master, and the kinder care he receives the better he can work. Although the Heavenly Father has denied us the power of human speech, we have a language of our own, and so we talk over our masters and our daily lives with each other, and we are glad always to tell of a gentle pat ,a kind word or a lump of sugar. We are not without affection for those who are good to us, and I wish that every man would treat his animals so that he could truthfully say

"That mercy I to other show
That mercy show to me."

Good night, dear master. A few more nights and you will mercifully help me across to that other shore where no morning call of your can reach the ears of Old Jerry.

Mrs. L. M. HILLS,
in Our Dumb Animals.

Do You Consider Wear and Tear

On your harness when you figure your profits for the year? Ordinarily that's a big item but you can make it negligible by using

EUREKA
HARNESS OIL

Keeps the leather soft and prevents cracking. Adds years to harness life.

Dealers Everywhere

The Imperial Oil Company
Limited
BRANCHES IN ALL CITIES

Advertising Stallions in Indiana.

The Indiana Stallion Enrollment law makes advertising simple and easy for the stallion owner, plain and exact for the printer, and honest and instructive to the farmers and breeders of the State. The stallion owner looks largely to advertising to call the attention of the public to his business.

There are three principal lines through which he may advertise, namely, the local papers, circulars to be distributed through the mail, and posters.

Advertising has come to be recognized as a splendid medium through which to attract the public. Honest advertising which tells essentials and which conceals nothing vital is the kind that is in demand today. Honesty and reliability spell success for the advertiser in any line. So it is with the stallion business. An ad. placed in the local paper, and attractively written, will earn many times its small cost.

To comply with the stallion enrollment law in newspaper advertising, is simple. The owner must have in his possession an official certificate of enrollment before he may advertise at all. That certificate of enrollment has a number. Section 9 of the law, which concerns advertising, specifies that the enrollment number must be used in newspaper advertising and statement must be made as to whether the stallion is pure-bred," "grade," "scrub," etc., and whether "sound" or "unsound." In addition, the stallion owner may state all he cares to regarding pedigrees, fees, location, etc. Nothing may be stated that is at variance with the provisions of Section 9 or that is misleading in any way.

Requirements for letter-heals, circular postcards, etc., are practically the same as for newspaper advertising.

Posters must contain the following in accordance with Section 9.

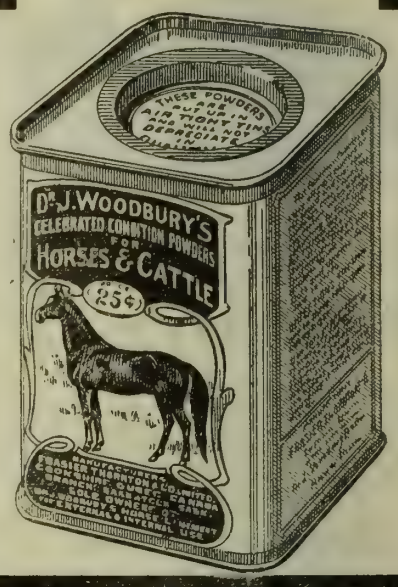
1. An exact copy of the certificate of enrollment.
2. Enrollment number.
3. Statement as to whether "pure-bred," "grade," "scrub," etc.
4. Statement as to whether "sound or "unsound."

In addition, progressive stallion owners state their fees, terms, location and other things which mean good business. Two posters must be used at the home stable and at all other places where the stallion is used for public service. The Enrollment Board furnishes two posters free with each enrollment and supplies additional ones at slight cost. Posters may be made by a local printer that fulfill the requirements of the law and which may be used upon stables.

Cuts from photographs of the stallion may be used in advertising. Anything not from an actual photograph must be labelled as not a true picture in any advertising in which it may appear.

The public must depend upon advertising for information concerning stallions and jacks available for use. In this, the public has the protection of the law, in that, no fees may be collected through court if incorrect advertising has been used or if the owner has failed to use posters as required in Section 9. The breeders are looking to advertising as a chief source of information concerning available stallions. Now that the law requires advertising to be correct in all statements the public is depending upon it to a marked extent.

The Enrollment Board is assisting the stallion owners of the State in an active advertising campaign. Copy sent to the office at Lafayette is examined and corrected, and if possible, improved. It is the desire of the Board



Cured Biliousness Prevents Bright's Disease

The Certified Statement of One Who Has Proven the Efficiency of Dr. Chase's Kidney-Liver Pills.

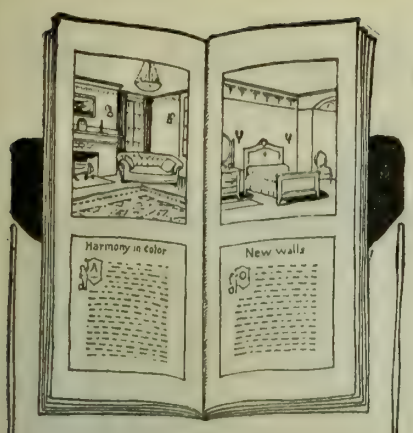
Mr. Colin M. Kiel, Craighurst, Simcoe county, Ontario, writes: "My mother and I have both used Dr. Chase's Kidney-Liver Pills with great satisfaction. We find that there is nothing to equal them as a prompt cure for torpid liver, biliousness and indigestion. Some years ago my mother came near to death from kidney trouble and has to be careful in preventing Bright's disease. By using Dr. Chase's Kidney-Liver Pills occasionally she keeps the kidneys healthy and active. Another point favorable to Dr. Chase's Kidney-Liver Pills is that they do not gripe and yet accomplish good results. You are at liberty to use my letter."

This statement is endorsed by Mr. Marmaduke Caston, Justice of the Peace, who writes: "This is to certify that I am personally acquainted with Mr. Colin M. Kiel and believe his statement regarding Dr. Chase's Kidney-Liver Pills to be true and correct."

If you are interested in this case, write to Mr. Kiel, enclosing stamp for reply, and he will verify his statement. We like to have people to do this, for we are very careful to only use statements from responsible persons.

Should this case not be similar to yours, write to us for the statement of some one whose trouble was along the same lines. We have thousands of letter to choose from. Or better still, put the KidneyLiver Pills to the test right away. They will only cost you a quarter and a box lasts for some time.

As a means af awakening the action of liver, kidneys and bowels and thereby curing biliousness, indigestion, backache and kidney troubles, Dr. Chase's Kidney-Liver Pills hold a unique position. By their combined action on these eliminating organs they prove effective in complicated ailments which defy ordinary treatment. One pill a dose, 25 cents a box, all dealers or Edmanson, Bates & Company, Limited, Toronto.



Going to Decorate?

If you are going to "do" the dining-room or the bedroom, or even the kitchen, this spring, you need this book. It illustrates in photogravure, in colors, rooms done with Alabastine. It contains suggestions and ideas for color schemes, and it shows how you can do the work yourself.

Alabastine

Artistic Wall Tints

A copy of "Homes Healthful and Beautiful" costs but 15c. (coin or stamps), but if it saves you from making even one mistake—and there is nothing easier to make than mistakes in color—will it not pay for itself a hundred times over? Then send for it now and study it before you start housecleaning.

THE ALABASTINE COMPANY LIMITED
37 Willow Street Paris, Ontario

27

Lump Jaw

The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in

Fleming's Vest-Pocket Veterinary Adviser

Most complete veterinary book ever printed to be given away. Durably bound, indexed and illustrated. Write us for a free copy.

FLEMING BROS., Chemists,
41 Church Street, Toronto, Ont.

Don't Cut Out A SHOE BOIL, CAPPED HOCK OR BURSITIS FOR ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

will remove them and leave no blemishes. Reduces any puff or swelling. Does not blister or remove the hair, and horse can be worked. $2 a bottle delivered. Book 6 K free.

ABSORBINE, JR., the antiseptic liniment for mankind. For Boils, Bruises, Old Sores, Swellings, Varicose Veins, Varicosities. Allays Pain. Price $1 and $2 a bottle at druggists or delivered. Will tell more if you write.

W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada.

ADVERTISE IN THE MARITIME FARMER TO GET RESULTS.

that all advertising shall be correct in order that the public shall have correct information and in order that stallion owners need lose no fees on account of incorrect advertising.

It pays to advertise in the horse business. The stallions that are most advertised today are the ones that are bringing the largest revenue to their owners. A letter containing a copy of Section 9 is sent with every enrollment along with explanation on some features. The stallion owner has only to use this letter, following the instructions, and the requirements of Section 9 of the law to provide himself with advertising which will be legal, and which will bring his business before the public and greatly increase his success.

H. E. McCARTNEY,
Assistant in Animal Husbandry Extension and Secretary Stallion Enrollment Board.

Slipping Horses.

(From the Cleveland Plain Dealer.)

For making a poorly shod horse pull a load too heavy for his weight up a slippery hill a Cleveland judge fined a driver several times what it would have cost to take the animal to a blacksmith shop. It would be unfortunate if the lesson of the incident reached no one but the one offending driver.

Many weeks of slippery weather remain before horses in worn-out shoes can be sure of their footing on city streets. Few better ways exist for indicating one's humanity than in giving the animals one drives a chance for their footing. A horse straining himself to keep from falling while pulling a load perhaps too heavy for his weight is a reflection upon his owner.

If teamsters would load more lightly when streets are treacherous with ice and snow, and then give their horses shoes that permit them to keep their feet, they would do themselves as well as their animals a favor. Needless to say, most owners and drivers of horses meet the requirement.

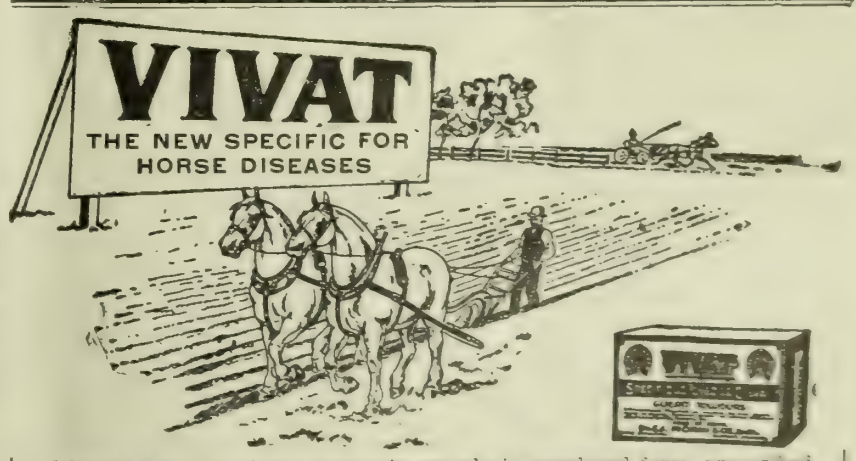
Mare with Lampas.

I have a young mare suffering from lampas. Could you tell me the best way to treat her, and cure?—Milkman.

Answer: "Lampas," concerning the character of which there exists a great deal of misapprehension, and also needless anxiety, is the name given to a swelling which arises from congestion of the blood-vessels in the lining membrane of the palate, the enlargement of the bars being mostly seen in young horses during the process of teething. It occurs occasionally in old horses from irregularities of the teeth, or it may arise in any animal from inflammation set up by bit injuries, but for all practical purposes "lampas" may be regarded as a juvenile trouble, and as the mare in question, said to be "suffering from lampas," is described as young, the probable cause is dental changes. Owing to inflammation of the gums set up by irritation caused by the eruption of the permanent incisors extending to the palate, it swells and becomes level with or even projects beyond the nippers, and causes feeding to be a somewhat painful business. Colts at grass rarely suffer much, as their food is natural—cooling, tender, and easy of digestion—but the animal that has been taken into work, and fed with hard corn and dry hay, finds mastication painful, and often falls away in condition. Generally, an alteration in the diet to crushed oats and wet bran with scalded chaff, tended green meat in season, or carrots, &c., in winter, at the same time easing the work, will suffice to effect the cure, because in a few days the inflammation and soreness pass away, and the colt can feed again in comfort. In persistent cases, or where the congestion is considerable, and the swelling projects beyond the incisors, all that is necessary is to lightly scarify the swollen plate with a lance or sharp penknife. These superficial incisions result in the flow of a little blood, which promptly relieves the local congestion. A few doses of cooling medicine—say 2 oz. of Epsom salts and a little gentian or aniseed—in the soft food once a day soon results in the disappearance of the swelling.—M.R.C.V.S.

MAKES THE WHITEST LIGHTEST
ROYAL
YEAST CAKES
E.W.GILLETT COMPANY LIMITED
TORONTO, ONT.
WINNIPEG MONTREAL
MADE IN CANADA
Bread is the cheapest food known. Home bread baking reduces the high cost of living by lessening the amount of expensive meats required to supply the necessary nourishment to the body.
REFUSE SUBSTITUTES.
E.W.GILLETT COMPANY LIMITED
WINNIPEG TORONTO ONT. MONTREAL

Get Real Tire Economy!
Motoring is two things—a pleasure and a business. One might say it was used sixty per cent. for entertainment and forty per cent. for commercial purposes. Yet no matter whether you use your car to get orders or ozone, your greatest economy will be the reduced cost of mishaps.
No accident ever befel an automobile but what the tires were forced to play a part in it. And no accident ever was averted but what the tires had a say in that, too.
If you will drive fast,
If you will make those sudden stops,
If the city will water asphalt,
If rain will make muddy roads;
Why then—the possibility of skidding will always be with you, unless you figure on those elements of danger when you buy your tires. When you think of how to avert danger in motoring you immediately think of . . . . . .
DUNLOP TRACTION TREAD.
S.T. 113
DUNLOP
SEAL OF QUALITY
TREAD
TRACTION



"VIVAT" is an energetic remedy in powdered form, prepared with great success by prominent Veterinary Surgeons, for the absolute cure of COUGHS, HEAVES, etc. It acts as a diuretic in cases of COLICS and is prescribed for WORMS. "VIVAT" strengthens DRAUGHT-HORSES as well as RACERS and gives them endurance.

A 50c Box of "VIVAT" is sufficient for 6 days' treatment.

FOR SALE BY ALL PROGRESSIVE MERCHANTS.

DR. ED. MORIN & CO., LIMITED - - - - QUEBEC, CANADA

POULTRY

Planting Poultry Yards.

Unsheltered from the rays of the hot summer sun and unprotected from the raw winds of fall and winter a poultry yard will never harbor the profitable flock that lives in the ward well shaded and shielded from the heat and storms. At the Michigan station, young orchards have been planted in many of the yards and additional shade has been produced by growing a cover crop of millet under the trees.

When loaded with fruit in August the young plum trees were bent nearly to the ground and the heads of millet waving in the lower branches formed a mass that made it difficult to see the flock of young White Leghorns which scurried rapidly through the dense foliage. The chickens were protected from the hot summer sun and even the hawk would have had little opportunity to swoop down and carry off one of them.

The planting of fruit trees in the poultry yard is one of the best methods of insuring shade and protection for the flock. Apples, pears, plums or cherries will be satisfactory, but where this method of furnishing shade is used, the plum and the pear are considered the most desirable. These trees grow fairly rapidly, but do not become large enough to interfere with the fences or buildings. Apple trees are not so satisfactory in the yard as they grow slowly and finally run together if they have been planted close enough to be of any shade value when young.

The Best Trees to Plant.

One reason for planting the pear is that it will grow better without cultivation than most other fruit trees. It is difficult to give regular cultivation to the ground in the poultry yard and therefore it is not possible to raise some things there to the best advantage.

Do not place the trees too close to the poultry house as it will be necessary to spray them with the same applications that are used in the large commercial orchard. A Van Buren county, Mich, farmer planted several pear and apple trees in his poultry yard, but they were never sprayed as it was difficult to run the spray wagon into the yard.

He carefully sprayed the remainder of his orchard, but had considerable trouble in keeping down the San Jose scale in the vicinity of the poultry yard. An inspection proved that every tree in the pard was plastered with scale and the sparrows were carrying it back and forth from the unsprayed trees to the commercial orchard.

Spraying Trees in Poultry Yards.

It is rather difficult to spray near the buildings without injuring them, especially if a slight wind is blowing. So plant the trees far enough from the poultry house that they can be sprayed without any danger of the material falling on the painted surface of the buildings.

A long hose can be attached to the spray tank and run through the fence at various points until every tree has been thoroughly covered. In this way the poultry can have the benefit of the orchard shade and the farmer can raise good fruit in the yard. The trees make a healthy growth and there is no danger of plant disease or insect pests being harbored to later be transferred to other parts of the farm.

The planting of a cover crop under the trees before the birds are turned into the run is a desirable feature in the orchard method of shading the yards. The cover crop will hold the leaves that are blown down in the fall and assist in forming a fine mulch on the ground in the yard.

Sunflowers Make a Good Crop.

A farmer in Ingham county, Mich., decided to plant sunflowers in his chicken yards. He raised an excellent growth which formed a fine protection for the birds during the summer and a source of food supply when the seeds were ripe in the fall. His neighbor had a large open chicken yard which was unprotected and the birds were confined in quarters which made it impossible for them to find summer comfort either on the inside or the outside of the poultry house.

White Plymouth Rocks were raised on each farm and in the fall it was easy to tell which flock had been exposed to the hot sun of the summer months and which had enjoyed the thick growth of sunflowers. The unprotected birds developed a roughness of feather not evident in the flock that had been growing in the shaded run.

A combination of fruit trees and rows of sunflower stalks will make a fine shelter for the farm poultry yard. Plant the trees the distance apart for the variety selected and then sow the sunflower seeds in rows lenghtwise of the run.

If the farm flock is confined a large part of the year, the double or triple run is a large factor in the successful management of the business. In the case of the triple run, one of the yards can be used for permanent plantings of such crops as blackberries or asparagus and the fowls can be turned in when there is no danger to the growing crops.

When using the double run one of the yards should always contain a good crop of grass or growing grain to provide fresh green food for the confined birds. One of the runs can be sown to oats in the spring and when the crop is about six inches high the birds can be turned upon it to feed. Then the other yard which has been closely cropped by the hungry flock can be ploughed and sown to oats.

When the growth in the second yard has been nearly consumed, the flock can be turned back into the first yard and the second can be sown to millet. In this way the ground is kept free from disease and the chickens are insured the plentiful supply of green food which is impossible when they are confined in the same run during the entire season. The following outline plan has been used with success:

	Yard 1	Yard 2
Early spring	Chickens	Sow oats
When oats are 6" high	Oats	Chickens
When second crop oats is ready,	Chickens	Millet
Autum	Barley	Chickens
Late fall	Chickens	Rye

At the opening of the spring season the chickens are turned into the yard that was planted last in the fall and oats are sown in the other yard. The rotation is then continued as indicated in the above plan. In this way the flock is given plenty of green food and the forage crop furnishes some shade at the same time.

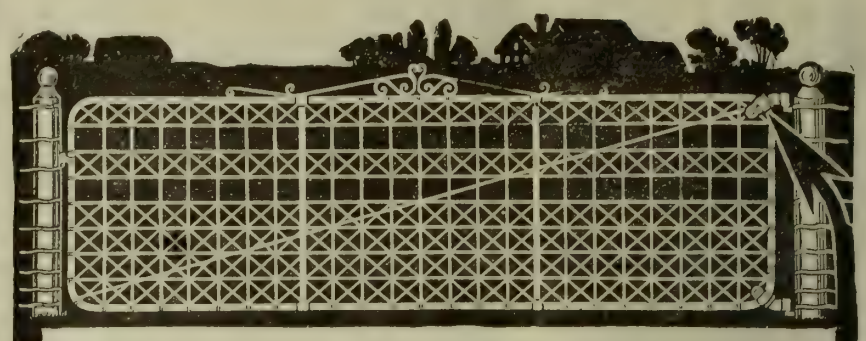
Evergreens to Break the Winter Winds.

Indian corn and the castor bean are valuable plants for the poultry yard and evergreen trees make excellent windbreaks and furnish cool shade in the summer. The evergreen should not be planted too close to the buildings however, as they keep the sun away during the winter. Deciduous trees drop their leaves in winter and not only furnish shade, but allow the sun to shine in the buildings.

Even when the flock is allowed the freedom of the farm and the barns, it is advisable to have shady plantings where the birds can seek protection in hot weather. On large poultry farms it is absolutely necessary to confine the birds, especially if the farmer is raising fancy stock. It is then that the shady yard becomes doubly necessary to keep the flock in prime condition and the farmer who quarters his flock in clean shady yards will be well repaid with the increased production of eggs and the improved vigor of the flock.

The Improved "Ideal" Farm and Stock Gates

Made in Canada By Canadians For Canadians



ONE look at this IDEAL Gate is sufficient to convince anyone of the superiority of IDEAL Gates over any other make.

Improved IDEAL Gates are without exception the best and most complete gates, combining as it were all the most modern improvements with proficiency.

IMPROVED "IDEAL" Gates do not cost more than any ordinary common Gate.

Note the **position** of the **hinge clips** at the **corner bends** instead of on the back of the gate. This improvement provides the greatest resistance ever required and ensures perfect control—especially on long gates—and it also prevents the back part of the gate from breaking or bending.

THE IMPROVED "IDEAL" FARM AND STOCK GATES EQUIPPED WITH A BRACE TIGHTENER ATTACHED TO THE TOP HINGE CLIP.

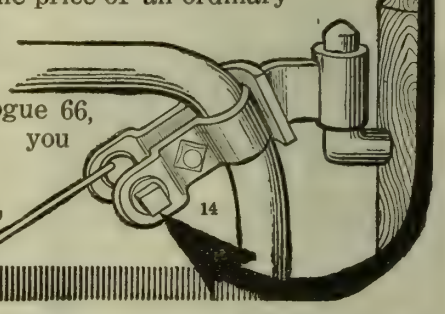
Notice how the end of the brace wire is inserted in a hole in the ratchet wheel of the brace tightener (see illustration), enabling you to tighten or replace the brace wire in less than two minutes with a wrench, when you have practically a new gate without any extra cost.

In all Ideal Gates, we still maintain the same high quality of material, workmanship and finish that has made Ideal Gates so popular.

Remember that the Improved IDEAL Farm and Stock Gates have features that no other gates sold in Canada possess.

They are worth twice the price of an ordinary gate but WILL NOT COST YOU ANY MORE, IF AS MUCH.

Ask for Complete Catalogue 66, which will be mailed to you immediately.



The McGregor Banwell Fence Co., LIMITED,
P.O. Box 1842. MONTREAL, Que.

14

Difficulty in Raising Squabs.

I have a few fine pigeons and while they seem to be ferfectly healthy and in good condition, my difficulty is with the squabs. My birds are good producers, but when the squabs are about 10 days to two weeks old they die, and so far I have been unable to ascertain the cause. I have been feeding a mixed feed containing cracked corn, wheat, peas, kafir corn and other seeds. I also keep them supplied with ground oyster shell, gravel, etc. Their coop is always kept a sclean and free from vermin as possible, while good clean water is always kept before thew.—W. A. Graber.

The care and feed is all right, except the wheat. Red wheat is the only kind fit for pigeons.

You do not state whether you feed salt or not. In case you have not been feeding salt it is undoubtedly the reason why the youngs birds die. It is impossible to raise pigeons unless they have access to salt at all times, either in the shape of fine salt kept in a box, or rock salt kept wet every day. They should also have charcoal, gravel and oyster shell.

If the pigeons have been fed salt, then the cause of the young birds dying is the way in which they have been fed, rather than the feed given. There are two ways of feeding pigeons, feeding by hopper or by hand twice a day, all the birds will eat up clean. Be sure they have plenty to eat, but that none is left on the ground.

Hand feeding I consider the proper way, but many prefer hopper feeding. The only trouble with hopper feeding is where a number of grains are fed, the birds will pick out only the kind they like. Consequently they do not eat enough themselves and the young birds are not properly nourished. Although the old birds have plenty before them it is not utilized. If the hopper method is used, I would advise feeding equal parts of corn, peas and buckwheat.—T. Edward Cordis.

Feediag Young Chicks

The young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. The first feed may contain either hard-boiled eggs, johnnycake, stale bread, pinhead oatmeal, or rolled oats, which feeds or combinations may be used with good results.

Don't Limit the Beauties of Your Flower Garden

by thoughtless seed buying! Choose the varieties with an eye to the possibilities of your own particular space and location—but be even more careful to get

Ewing's Reliable Seeds

Then you can be quite sure that the seeds will germinate and grow—that the plants will be strong and healthy—and that the bloom will be abundant and beautiful.

Write for our new 1916 Illustrated Catalogue—the biggest and finest yet! It will help you to plan—and realize—a garden that will be a delight. If your dealer has not Ewing's order direct from us.

The William Ewing Co. Limited
SEED MERCHANTS 47
McGill Street - - Montreal

SEED OATS SCOTT

Insure a bigger crop this season by sowing "H. & S." specially grown Banner Seed Oats. Put up in 3 bushel stamped bags. Write for samples and prices. If you can handle carload of produce, write or wire for quotation.

HOWARD & SCOTT, Cornwall, P.E.I.

STRAWBERRY PLANTS.
All the best varieties at reasonable prices. Send for price list.
JOHN N. CHUTE,
Berwick, Nova Scotia.

IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARITIME FARMER.

Mashes mixed with milk are of considerable value in giving the chickens a good start in life, but the mixtures should be fed in a crumbly mass and not in a sloppy condition. After the chickens are two months old they may be fed four times daily, and after three months old three times daily, with good results.

A Good Recipe for Johnnycake.

Johnnycake composed of the following ingredients in the proportions named is a very good feed for young chicks: One dozen infertile eggs or one pound of sifted beef scrap to 10 pounds of cornmeal; add enough milk to make a pasty mash, and one tablespoon of baking soda.

Dry bread crumbs may be mixed with hard-boiled eggs, making about one-fourth of the mixture eggs, or rolled oats may be used in place of the bread crumbs.

Feed the bread crumbs, rolled oats, or johnnycake mixtures five times daily for the first week, then gradually substitute for one or two feeds of the mixture finely cracked grains of equal parts by weight of cracken wheat, finely cracked corn, and pinhead oatmeal or hulled oats, to which about 5% of cracked peas or broken rice and 2% of charcoal, millet or rape seed may be added. A commercial chick feed may be substituted if desired. The above ration can be fed until the chicks are two weeks old, when they should be placed on grain and a dry or wet mash mixture.

A Good Growing Mash.

After the chicks are 10 days old a good growing mash, composed of two parts by weight of bran, two parts middlings, one part cornmeal, one part low-grade wheat flour or red-dog flour, and 10% sifted beef scrap, may be placed in a hopper and left before them at all times. The mash may be fed either wet or dry; if wet, only enough moisture (either milk or water) should be added to make the feed crumbly, but in no sense sloppy. When this growing mash or mixture is not used a hopper containing bran should be accessible to the chickens at all times.

When one has only a few chickens it is less trouble to purchase the prepared chick feeds, but where a considerable number are reared it is sometimes cheaper to buy the finely cracked grains and mix them together. Many chick feeds contain a large quantity of grit and may contain grains of poor quality, so that they should be carefully examined and the quality guaranteed before they are purchased.

Treating White Diarrhea

The experience of Edward S. Parsons of New York, a practical poultry keeper, with bacillary white diarrhea, differs from the opinions expressed by the doctors who have studied this disease. Through the use of sour skim milk Mr. Parsons claims to have not only stopped the disease, but proved that milk-fed chickens can be raised successfully, whereas the untreated ones die.

It was in May, 1913, that Mr. Parsons took the care of a large poultry farm. Young chick were dying by hundreds, and the doctors who were called in advised that the only way to get rid of the disease was to test all breeding stock and use eggs from only the healthy hens, or clean out the plant and start anew.

Feed Sour Skim Milk.

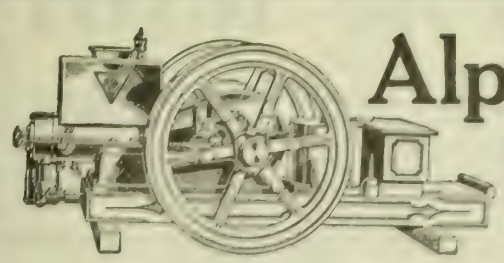
Knowing that sour skim milk was a splendid food for both chicks and fowls, Mr. Parsons decided to try it. He used a commercial starter of 6 to 7% lactic acid on account of the higher per cent of acid. The incubators were darkened when the eggs hatched so the chicks would not pick up egg shells or droppings from others, and thus spread the disease.

The chicks were removed from the incubator as soon as dry and given a pen dropperful of sour milk. Mr. Parsons thinks it necessary to give a large dose so early in the life of the chick to fill as far as possible the intestinal tract with lactic acid. This will prevent the germs of white diarrhea from getting a start.

The chicks were placed in the brooders, but not fed for 36 hours. They were given water to drink to which permanganate of potash was added. As soon as they learned to drink, which is in two or three days, they were given sour skim milk.

Although the breeding stock was supposed to be quite badly infected with the germs of white diarrhea, Mr. Parsons mated up the breeding pens early in the winter of 1913. The hens were given plenty of sour skim milk to drink, and were otherwise well cared

No case of white diarrhea developed last season in more than 4500 chicks which were hatched. The total loss of young chicks was less than 3% from all causes, although the year previous it ran up to 60 and 70%, and in some cases 100% before sour skim milk was used.



Alpha Gas Engine

This engine will pay for itself quickest

BECAUSE of its low fuel cost and exceptional freedom from expensive repairs, the Alpha will pay for itself on your farm in the shortest time. You will get greater and quicker returns for the money invested.

You may be able to buy an engine for less money than you can an Alpha, but that should not be your chief consideration in selecting an engine. You should always keep in mind the service you will get from the engine. No other engine will give you as much for as little money as the Alpha.

The Alpha is a simple engine with plenty of power, perfectly controlled by a most sensitive governor, that keeps it running steadily and smoothly under light, heavy or varying loads. The fuel consumption is accurately gauged to the load so that there is no waste.

This engine has no complicated, delicate parts to require constant attention—not even batteries. It starts and operates on a simple low speed magneto. You can use either kerosene or gasoline for fuel and the minimum amount of either will be required.

There is a great deal of work on your farm that can be done better and cheaper by using an engine. You can save enough to pay for the engine in a very short time. The quickest way to save the money that will pay for your engine is to buy an Alpha now, and put it to work.

Ask for a copy of the Alpha Engine catalogue. It contains a lot of valuable information about gas engines. Alpha Engines are made in eleven sizes—2 to 28 H. P.—each furnished in stationary, semi-portable, or portable style with hopper or tank cool cylinder.

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MONTREAL PETERBORO WINNIPEG VANCOUVER

Why Turkeys are Delicate.

The majority of turkey breeders make a grave mistake in mating together birds that are too young. A fact that does not seem to be commonly known—or, if konwn, ignored—is that turkeys do not attain full maturity till they are three years old, and thus yearling cocks and hens should not be mated together. If pullets are used, they should be served by a two, or, preferably, a three-year-old cock, and vice versa.

Only in this manner will strong, healthy chickens be produced, those possessing a sound constitution and an abundance of vigor; while, on the other hand, if immature stock be employed, the offspring will probably be delicate, and a considerable amount of difficulty will be experienced in rearing them successfully.—Edward T. Brown, England.

Ridding Yards of the Capeworm.

If your chicks or poults were troubled with gapes last season energetic methods should be employed before chicks are hatched to rid the infested trouble. Spread a coating of slaked lime over the entire poultry yard and do not disturb it for a month, which will give the rains a chance to soak it through the soil.

Before allowing chicks on the ground, the soil should be ploughed and planted to oats or some other crop. Perhaps the best way to prevent gapes is to move the house and yards where chicks are raised, to a new location each year and cultivate the infested ground for a year or two.—T. Z. Richey.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

The Worth of a Wife.

By Leslie Childs.

"Don't you want to go to church this morning, Myro?" called Mort Bradley, from the side gate, to his wife as she stood in the doorway. "No, I don't think so, Mort," she replied, "I don't hardly feel able," and she returned into the kitchen. He noticed how tired and worn she looked, but it was such a beautiful morning he wondered it did not tempt her. "I'll go down to the barn and do the feeding, and maybe you'll feel like going when I get back," he called and then walked moodily in the direction of the outbuildings.

Mort Bradley was worried about his wife. As he crossed the lot between the house and barn, his eyes roamed listlessly over one of the finest farms in the county. It was well fenced, well tended, with choice stock in every pasture, in fact here was everything to gladden the heart of a true son of the soil. But as he passed on he did not see these things, for he was thinking of a certain June morning three years before, when he and his wife had stood together under a bower of roses.

He thought of the congratulations of his friends, and the seemingly sure prospect for a happy life. And it was beginning to wane. In the three years he had been successful beyond his greatest hopes. His crops had been good, he had stocked the farm, had bought everything in the market in the way of improved machinery, and had even then placed money in the bank.

But in that time a great change had come over his wife. The piano stood in the corner, untouched, except when they had compnay, or he requested her to play. She spent most of her time in the kitchen. Of an evening she wasn't much company for him, she usually did some sewing, then went to bed. Mort couldn't understand it. She never felt like going anywhere, and if she did, he began to notice how unfavorable she compared with her former girl friends.

Mort went to church alone that Sunday morning, and on the way back passed George Merton's place. George was what some people called a "paper farmer," but he had made a success of farming; that no one denied. "Come over and have a chat," he called from the front porch as Mort drew rein. Mrs. Merton now came out and welcomed him. She and George had been married five years, and she looked as young and girl-like, as the day the ceremony was performed.

"Come in and have dinner with us," she gushed, "and why didn't you bring Myra along?" she continued. She and Myra had been school-girl friends, but since their marriage had not seen much of each other. Myra had little at a time dropped out of her old circle of friends, while Mrs. Merton had continued the friendships of her younger days.

Mort went in, and as he and George sat talking he glanced into the kitchen where Mrs. Merton was getting dinner. She fluttered around the room, with a song on her lips, as though she really enjoyed getting a meal. Mort noticed she didn't have to run out to the cistern every time she needed a little water, there was a sink and little pump in the kitchen. He saw a fireless cooker, a separator, and a dozen other labor-saving machines. The sight of these improvements set him to thinking.

"Good gracious, George," he exclaimed, as he waved his hand in the direction of the little, pump and sink, "how do you ever afford to put all such jimcracks in the kitchen? Must cost a pile of money." George laughed. "Yes," he admitted, "they cost money, but they pay for themselves a hundred times over in the course of a year. I don't see how I could get along without them. Now, that sink and pump there, I guess that saves my wife about a hundred trips to the yard in the course of a day. So figured on the cost of labor saved it is as good an investment as the binder." "But she has all day to do the work in," objected Mort. "Yes, that's true," agreed George, "but it makes a great difference to me in the evening. When I come home I want some one here that will be a comfort and a companion to me. If my wife chased around all day dumping dish water, and carrying loads that might just as well be dumped through a hole, and carried by machinery, she won't feel much like entertaining me in the evening.

"Then there's another way of looking at it. Wives are very expensive things to have around. It costs like the dickens to get a good one, and you run so many risks besides. So I figure when a man has one that suits him he ought to make her last as long as possible." "George, you brute," laughed his dife from the kitchen door, as she shook the dish rag at him.

"Yes," continued George, "I think a husband should give his wife free rein in the kitchen, that is, if she is up-to-date, and can think of and suggest improvements. If not he ought to see to it himself, and insist that everything modern should be installed. For if the culinary department on a farm doesn't show a profit in pleasant evenings and social intercourse, there's something wrong And the farmer is either heading for the divorce court as defendant, or to the graveyard as chief mourner. In ther case he's going to be the loser."

As Mort drove home that noon he pondered long on what George Merton had said. He had never looked at things from that viewpoint. He had always looked at money spent in the kitchen as just that much waste, in so far as an actual return could be expected. He wondered if his friend was right, and he determined to carry on some investigations, on his own account, that would at least give him an idea of the labor-saving value of these modern kitchen improvements.

The next morning after feeding he returned to the house, and placing a chair in the doorway seated himself. He sat in a position that would enable him to watch every movement his wife took. "Why, what's the matter?" she asked in a tired sort of way, aren't you gonig to work this morning?" "No," he replied, "I thought I'd take a little time off this morning. I'm expecting a man out here on business. and I don't want to miss him," he lied as he saw the surprised look on his wife's face. He maintained his seat in the doorway until noon, despite his wife's wonder and questions.

When he resumed his seat after dinner, she became alarmed. It was the first time Mort had ever loafed around the house since they were married. It wasn't like him. "Why' Mort, what in the world is the mtater with you? Are you sick?" she inquired with much concern. Laughingly he assured her that he was perfectly well. But that evening, when she saw him take a tape and measure the distance from the kitchen to the cistern, she thought he was surely losing his mind. To her rather insistent questioning he only smiled, and that evening sat before the fire doing sums in arithmetic.

The next morning at the breakfast table he turned to her and said: "Myra, I think you'd better go over to your mother's house for a day's rest today." "Why, Mort," she replied in astonishment, "I can't possibly go to-day. Who would get your dinner? And there is so much work that I must do this morning; why, I couldn't think of going at this time." "No," he answered, "you don't need to think of going. In five minutes I'll be up here with the horse and buggy. and all you need do is climb in."

He was as good as his word. He bundled her in the buggy, and almost forcibly took her visiting. When he returned he used the telephone, and before dinner had two workmen from town at the house. They brought material for putting in a sink and took measurements for a number of other improvements.

That evening when Myra returned home she almost fainted in surprise when she saw the change. "Oh, Mort," she cried, "I now know what you were doing yesterday, and why you wanted me to go away to-day. You old dear. I've always wanted a sink and pump, but was afraid to ask for it, for fear that you would think they cost too much."

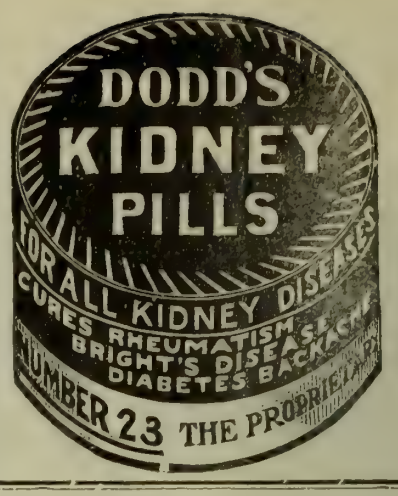
"Yes, dear," he returned. "I've been blind for the past three years. I've been thinking too much in dollars and cents. I've been letting you work yourself to skin and bone, all for the sake of a few pennies. Yesterday I kept account of the trips you made to the cistern, and it totalled up almost a mile you had walked. The little improvement that we put in to-day will save you all of that." He looked into his wife's eyes, and she was actually smiling in the old way.

"Yes. you're going to have everything you want for the kitchen from now on, so you can start thinking up things. I'm at least going to take as much care of you as I do the horses." With a little cry she flew to his arms.

That evening Myra played on the piano and didn't wait for him to ask her either. And in the days that followed, as he heard her singing at her work, he felt he was reaping interest at a thousand per cent. on the investment he had made.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.



Colds---How to Contract and How to Avoid

A cold is a serious thing; it is not due to exposure; we rarely get entirely well of it, and we do not "catch" it. The common, everyday "cold," of which we have all had our share, has been regarded as an evil to be endured, rather than avoided or cured

Colds are now known to be due to a germ. When we get a cold it means that the cold microbes have gotten into our nose and throat and have found a suitable place in which to grow and multiply in the mucus which is given off by these tissues. When our body is in prime physical condition this mucus covering of the nasal membranes does not afford the germs a suitable food and harbor for development. In other words, the normally resistant membranes of the nose and throat have the power to destroy these, and other kinds of germs, before they acquire a foothold within the deeper tissues. This resistance is well demonstrated by the trifling little sniffling colds, which we all have experienced, that disappear within a few hours.

Whether the cold germs are carried about by the winds or are distributed only by coughing, sneezing and spitting of those already infected, has not yet been fully determined. But the germs are abundant in every com-

ELDERLY WOMEN SAFEGUARDED

Tell Others How They Were Carried Safely Through Change of Life.

Durand, Wis.—"I am the mother of fourteen children and I owe my life to Lydia E. Pinkham's Vegetable Compound. When I was 45 and had the Change of Life, a friend recommended it and it gave me such relief from my bad feelings that I took several bottles. I am now well and healthy and recommend your Compound to other ladies." —Mrs. MARY RIDGWAY, Durand, Wis.

A Massachusetts Woman Writes:

Blackstone, Mass. — "My troubles were from my age, and I felt awfully sick for three years. I had hot flashes often and frequently suffered from pains. I took Lydia E. Pinkham's Vegetable Compound and now am well." —Mrs. PIERRE COURNOYER, Box 239, Blackstone, Mass.

Such warning symptoms as sense of suffocation, hot flashes, headaches, backaches, dread of impending evil, timidity, sounds in the ears, palpitation of the heart, sparks before the eyes, irregularities, constipation, variable appetite, weakness and dizziness, should be heeded by middle-aged women. Lydia E. Pinkham's Vegetable Compound has carried many women safely through this crisis.

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DIVISION OF LONDONDERRY.
BY THE RECORDER OF LONDONDERRY.
EQUITY SIDE.

Between MARGARET HAMILTON, Administratrix of Sarah or Sally Cochrane, Deceased, Plaintiff. WILLIAM JOHN COCHRANE and ALEXANDER LINDSAY, Defendants.

Information in this suit is required by the above Court as to the Descendants of the late Mary Walker, daughter of James Cochrane, of Tirglasson, in the County of Londonderry, Ireland, Deceased. About 30 years ago Samuel C. Walker, a son of the said Mary Walker, resided at Sussex, King's County, New Brunswick, America.

ALFRED MOORE MUNN,
Clerk of the Crown and Peace,
Court House,
Londonderry, Ireland.

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In every locality to ride and exhibit a 1916 Hyslop Bicycle with latest improvements.

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munity, and the infection appears to be distributed everywhere.

Exposure is not the cause of "catching cold." Many people get colds while indoors, attending public meetings, and in overheated houses; while the multitudes, often very poorly clad are out in all sorts of weather with impunity, and yet do not take cold. The trench warfare of Europe has disproved beyond doubt the theory of colds being due to wet and exposure to bad weather alone.

Exposure, used in the sense of being out in bad weather, need not result in "catching cold." Nor does being exposed, along with the presence of the cold germs, always end in a cold. It is a dangerous combination, but to get a cold requires one thing more: the body must lack resistance; the body functions must be imparied; the organs and glands must lack in activity, and the system be overcharged with body poisons which destroy the protective balance of the vasomotor nervous system.

Because of this disturbance of the nerves, and with it a disturbance of the circulation, there will result a derangement of the heat formation in the body. The control of the body temperature has much to do with protecting the delicate membranes of the air passages from "catching cold." The heating plant of the body is automatic in its action, just as the beating of the heart. When we breathe cold air, more blood must be sent into the nasal membranes to warm the tissues and prevent a chilling of the air passages. If this central nervouse system is free to operate, the body warmth will be equalized perfectly. When the body organs are stagnant the central nervous system becomes poisoned, and for this reason fails to meet the necessary demands. When the membranes of the nose call for assistance when we are breathing cold air the poisoned nerves do not deliver the message. The reinforcement of rich, warm blood does not arrive, and then the cold germs "dig in," setting up inflammatory changes, and sutffing up the nose. Then you have "caught a cold." The body was lacking in resistance.

Colds may rapidly become serious. The inflammation caused by colds may extend along the many ducts leading the throat into the tonsils and lungs. Rarely do we recover from a cold without permanent injury. Usually no serious damage is done by any one attack, but frequently repeated colds soon develop into chronic nasal catarrh, enlarged tonsils, quinsy, deafness, noises in the ears, throat and lung trouble, and many chronic conditions.

A stuffed-up, weeping nose has heretofore been a joke, rather than a cause for alarm. In the long ago a treatment for colds of the head was "to hang one's hat on the bed post and to drink whisky and water until you saw two hats." In more recent times it was quinine and nauseous teas, with close confinement in an overheated living room, where the whole family was obliged to swelter during the evenings. A n open window, or the least bit of fresh air, was thought to be sure to drive the trouble down into the lungs, with the danger of pneumonia and consumption.

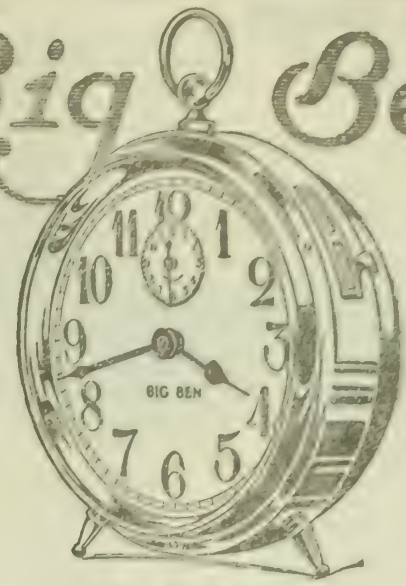
We are learning that the best treatment for the ordinary cold of the head is to supply the system with nourishing, easily digested food, and an abundance of fresh air, at the same time cleansing the nose and throat with mild washes, and the gastro-intestinal tract with active purges. In colds of the throat and chest this fresh-air treatment is also advisable. making sure that the body is well protected from the chilling winds, and the feet kept warm and dry.

Colds frequently are due to dusts of many kinds, nasal deformities, and irritating fumes. Threshers. millers, and others working in dust, are apt to suffer from congestion of the nasal membranes, making it easy for the cold germs to gain a foothold. To this class also belong the many kinds of hay fever.

Therefore "catching cold" is not due to any one thing. The cold germs, mechanical irritation, poor ventilation, exposure, derangement of the stomach, and a body hypercharged with wastes all may contribute a share.

Colds are dangerous in that they may lead to more serious things. Because colds are a germ disease it is not always possible to avoid being infected. Since a multitude of conditions predispose to "catching cold," it is necessary to keep the secretions of the nasal membranes resistant by preserving the best possible state of health. To do this we must maintain a high standard of perosnal hygiene. And of this I will tell you in my next paper.—Julian Clarke, M.D.

Big Ben



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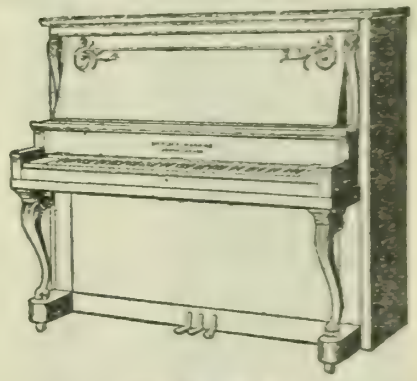

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Pimples are not a serious trouble, but they are very unsightly.

Pimples are caused wholly by bad blood, and to get rid of them it is necessary to purify the blood of all its impurities.

Burdock Blood Bitters has made many remarkable cures; the pimples have all disappeared, and a bright, clean, complexion left behind.

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Are gone, you can't go back and pick them up. Your premier opportunity may come to you next January. Will you be there ready to meet it, or will you let it slip by to be picked up by your competitor because you are not prepared? If you started right now to study Booking, Stenography, Banking, etc.' Today is the most important day in your career, because your decision of today determines your success a year from today. Write.

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Butter Parchment

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Mother Hubbard's Ironing Day

Today has been Tuesday. The sun rose early and so did I; both of us bright and active with the desire to get a lot done. The old sun was busy with the harvest but my energies were directed towards a large basket of fresh dried clothes from yesterday's wash. Homely things are clean clothes, yet we cannot be happy without them and lots of them. Did you ever stop to think how we women spend about half our time keeping things clean? Clean dishes, clean floors, clean clothes clean food, clean children and clean selves; and since "cleanliness is next to godliness," we may rejoice that our lot, our work is cleanliness. You know the old soldier's motto in one of Kipling's poems:

"Shoot straight, keep clean,
Love God, and serve the Queen."

(written in the reign of Queen Victoria). Well, if that is the whole duty of a soldier a housewife might be made to say:

"Cook well, keep clean,
Serve God and love the King,"

and it would keep her fairly busy to live up to it.

I didn't stop to say all this to the clothes basket when I say it so early this mornin. No; I grasped its two handles and "started action." A bundle of freshly dried clothes always appeals to me, so sweet and new they seem. They seemed to me this morning like a basket of new opportunities. So we greet every morning if we could but see it. Each day we start anew. The night has washed from our minds the stains of yesterday and the rising sun hands us a new day and its basket of new opportunities to do all sorts of things.

I began to sort the clothes to sprinkle them. That should have been done yesterday but I couldn't do it yesterday, so I was at it now. I guess every housewife consciously and unconsciously sorts out her labors as I did the clothes, what is not needed, first; what must be done, next; the careful things to be done when one has more time and the "don't matters" to be hurried over.

Marion's Methods.

I knew a student that was head of her class and yet never seemed to kill herself with work, and I said to her one day, "Marion, however do you accomplish so much and so easily?" And I have never forgotten Marion's answer, because it fits all sorts of work as well as study: "When I sit down," said Marion, "to face my work, I strike for essentials, and I say to myself, What's the main point in this thing? What counts most? and I do that first and thoroughly. Then I look at my clock and try and accomplish the rest of my task in an exact given time. I find the main thing is to pick out the essentials quickly—then my work is ordered and worth while."

How do you think Marion would apply her theory to the ironing? I imagine I her her say, "I'll put six hours on that ironing — three this morning and three this afternoon. Ironing clothes is a vanity of life We iron things to make them look better or feel better. It is a glory of the eyesight for ourselves and others. That being so, the things that show most are the essentials, the fine white starch and the table linen, so I'll put the most time on them." And I guarantee she'd be done in the six hours, no matter how huge the ironing.

"Preparedness."

"My I wish I could have sprinkled these things yesterday," I kept saying to myself. "Isn't that the way with most things in life. We haven't prepared to do them till they jump into us and cry, 'Do now, wether you're prepared or not.' Alas! why aren't we prepared.

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Money Savers for Farmers

Seven short appeals to "horse sense"

ANY man can make money by judicious saving. "A penny saved is a penny earned." Think it over. There are certain things you ought to have for farm maintenance. But don't buy the wrong thing at any price or the right thing at the wrong price. Perhaps right now you are in need of a timber preservative, a lice or fly killer, a durable paint for metal and exposed wood surfaces, a satisfactory cement for quick everyday repairs, a ready roofing that is wear-proof, easy to lay and cheap.

We can fit you out perfectly in these things. The Barrett Money Savers have no superiors. Just glance over the products shown below:

ARE you getting all you should from your live stock? Perhaps they are being pestered by insects—flies, lice, vermin. They must be kept clean. Spray your cows and horses with Creonoid. Keep them from insect annoyance. And your hogs will be better if the rubbing posts and swill pails are Creonized. A boon in the poultry house—better hens—more eggs. Creonoid comes in cans of 1, 5 or 10 gallons or in half barrels and barrels. And it's the most economical you can buy. Follow directions carefully.

DO your implements rust? If so, they are decreasing in value. Coat your implements and iron work with Everjet Elastic Paint. You know that carbon paint is best for such purposes. Well, Everjet is the best carbon paint made. Never cracks or peels. Wears like iron. Has a large covering capacity and is extremely economical. Has no equal as a roof paint.

YOU will be glad for the day when you met Everlastic Roofing. Just the thing for all farm buildings. The best "Rubber Roofing" at the price. And the price is low. No excuse for a leak in your roof with Everlastic at your service. It is tough, durable and easy to lay.

EVERLASTIC ROOFING

CARBONOL is a household wonder. It cleans, heals, disinfects, purifies. If you cut your hand, apply Carbonol in weakened solution. If your live stock get bruised, Carbonol will fix them up. If your house, barn or poultry house needs disinfecting, there is nothing like Carbonol. And it is wonderfully effective as a destroyer of vermin. Carbonol belongs on every farm in Canada.

HERE is a ready roofing that needs no painting or other attention to keep it watertight. Amatite Roofing has a mineral surface that laughs at wind and weather. Very attractive because of its bright sparkling appearance. Wherever you have steep roofs, you need Amatite. Amatite is made in rolls of 110 square feet with galvanized nails and cement in center. Try it!

HERE is a product you should never be without—Barrett's Grade One Creosote Oil. It is the most effective wood preservative on the market. Actual tests have proved that it penetrates deeper and lasts longer than any similar product. A good fence post will last 20 years if painted with Barrett's Grade One Creosote Oil. Use Grade One Creosote Oil and add to the life of all your exposed woodwork.

Barrett's Grade One Liquid Creosote Oil

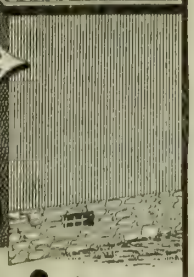
HERE is the way to make everyday repairs quickly, permanently and cheaply—use Elastigum, the adhesive, elastic and waterproof cement. Whenever you have gutters to join or reline, leaks or joints to seal, cornices to stuff, greenhouse glasses to put in or chimney flashings to renew, Elastigum will be your unfailing friend. Cheap, easy to use and always on the job.

Send for illustrated booklet describing Barrett Money Savers in detail. Address nearest office. For sale by good dealers everywhere.

THE PATERSON MANUFACTURING COMPANY., LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE - PATERSON MANUFACTURING CO., LIMITED
ST. JOHN, N. B. HALIFAX, N. S. SYDNEY, N. S.

There was a very precise Englishman to whom I was talking one day who is a splendid driver of his automobile. He had never had an accident. I was talking to him one day and he showed me a small red notebook he carried. "The way I do," he explained, "is to plan ahead what I would do in every emergency I can think of. I write them down and then think out what to do and write it down in three words if possible and carefully memorize those words. I say them over and over to myself, then when the thing happens I do it somehow without thinking. For instance, last week we would all have been killed but for this." He showed me a line which read "Turn into hill." "That saved us," he continued. "We were coming down that side of the mountain over there when something broke so that I couldn't stop the machine. I could see that corner ahead and heard the toot of another machine coming up. I was afraid we'd



Every Sheet is true and even

Empire corrugated Iron

"EMPIRE" Corrugated Iron is made with deep corrugations fitting closely and snugly; it makes a splendid, strong, rigid wall that withstands all storms. Remember—building with Metal gives you fire-proof, weather-proof and lightning-proof buildings.

Our "Metallic" building materials—the "Quality First" kind—may cost a little more than other building materials, but they're permanent. "Eastlake" Galvanized Shingles; "Metallic" Ceilings; "Metallic" Rock and Brick-face and Clapboard Siding; Roof-lights and Ventilators, Silo Tops, etc., save you money.

Write for interesting booklet giving complete information, prices, etc.

Metallic Roofing Co. Limited
Toronto - Winnipeg

168

Do you want to earn $10 a week or more in your own home?

Reliable persons will be furnished with profitable, all-year-round employment on Auto-Knitting Machines, $10 per week readily earned. We teach you at home, distance is no hindrance. Write for particulars, rates of pay, send 2c. stamp.

AUTO-KNITTER HOSIERY CO.
Dept. 226 257 College St. - Toronto
(Also at Leicester, England)

HOMESEEKER'S EXCURSION Via CANADIAN GOVERNMENT RAILWAYS.

Excursion tickets to points in Manitoba and the Canadian North West will be sold at reduced rates, good going every Wednesday from now until October 25th. The fare from St. John to Winnipeg is $55.00, Regina $58.75, Saskatoon $59.75, Calgary $63.00, Edmonton $63.00. The return limit is two months from date of issue.

Proportionately low fares from all stations in the Maritime Provinces to the above and other points in the North West. Full particulars can be obtained from any ticket agent of the Canadian Givernment Railways.

Holders of these tickets have the privilege of travelling by the new Transcontinental route via Toronto, North Bay and Cochrane, Ont., to Winnipeg.

go over the precipice, the road is so narrow at the turn, and I remembered this 'Turn into the hill.' So I did. It upset the machine sideways and gave us a bad shakeup, but we were all safe and no bones broken. The other party came round the curve just as we upset. My, it was a close shave!"

Every household should have a book "What to do in Emergencies," such as, In case of fire? In case of a broken leg? If baby swallowed poison? There are a hundred and one such things likely to happen to us and when they do happen we are so frightened we can't think what to do, while if we had our note book "Prepare to meet Emergencies," we'd do the thing before we knew it.

Just there in my meditations I saw it was time for the breakfast, which was duly accomplished, and the family sent off to its work and school, the place was tided again and I got out my ironing blanket.

One Way of Ironing.

Of course I did really get at the ironing. First of all I always run off the things that don't count, the dusters, rags, and stockings. "Poor relations," mother always called them—the last in the wash and the first in the iron. "Hustle them along and be done with them—they don't count." But I hope that isn't the way we treat our poor relations really for they are human beings and ought to count as much as anybody.

Then comes the sheets and the underclothes which we may call "the things out of sight." Since they are clean we won't say whether they are much polished or not. It is well if all things out of sight are the same. If our thoughts of things are pure and clean it doesn't matter so much if they're polished with education or not. Then come the things that take time and gratify our sense of the beautiful. We will enjoy these. There is a line to draw in our lives between the things we do to make life beautiful and the things we do because our neighbor is going to see it and talk about it. Keep high ideals in our work. To seek beauty is well, but our neighbors' good opinion is often not worth the strength and time it takes to get it.

A Child's Sense of Justice.

Just here my little five-year-old daughter came in. "Mamma, Mary had an orange to take to school; may I have one? I saw this involved not only the orange which she loved very much but the sense of the justice of equal gifts. It's hard always to give the same gifts to each child, but it must be done. A child's sense of equality and justice is so keen that we would injure that child morally if we did not live up to the high level of their faith in us, so Alice got the orange as well as Mary. Likewise my other two little ones. Four is a long list to go round. I am reminded of the story of the poor woman who had seven children, a keen sense of justice, and eleven and a half apples to divide between them. She was no mathematician but she divided those apples equally among the children. "How did she do it?" you ask. Why, she made apple sauce.

Young Men's Opinions.

This is a very cosmopolitan age and generally speaking there are no class distinctions. I was walking home the other afternoon when a young gentleman I know came up to me and we came along together and I was amused and amazed at his delicate distinctions in accosting the young ladies we met. "Hello there," he said to the saucy wave of a hand. "How do you do, Miss L?" to a quiet-looking girl. "Au revoir," to another. "Good afternoon,"

(Continued on Page 434.)

Take the Load Off the Centre

We needed an extra strong wagon to sell in Eastern Canada, and we went to the wagon designer with our needs. He said, "If your customers will stand for something new, I can give them a wagon they'll have hard work to beat. I'll change the design of the skein and take the weight of the load off the center of the axles." We said, "Go ahead," and the **Chatham** giant end-bearing skein is the result.

With this skein the load is carried at the end of the axle, close to the points of support made by the wheels. A steel truss under the axle, firmly clipped to the skein at each end, completes the design of this strong Canadian wagon gear.

Chatham wagons are made in all the styles used in Eastern Canada so that you can get just the wagon required for your work. Write us for folders giving full particulars of the material and construction of the wagons, trucks and carts sold by our local agents in Eastern Canada.

International Harvester Company of Canada, Ltd.

BRANCH HOUSES

At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' **trial of a home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience**, we know better than any doctor; and thousands have proved there is **hope** even **for the hopeless** in my method of home treatment. If you suffer from **pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid**, to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured**, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all.—**young or old.** To **Mothers of Daughters**, I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask** for the **free treatment to-day**, as you may not see this offer again. Address:

BOX 309, WINDSOR, ONTARIO MRS. M. SUMMERS

RED ROSE TEA "is good tea"

Suffered Awfully

FROM

BILIOUS HEADACHES.

When the liver becomes sluggish and inactive the bowels become constipated, the tongue becomes coated, the stomach foul and bilious headaches are the upshot.

Milburn's Laxa-Liver Pills will stimulate the sluggish liver, clean the foul-coated tongue, do away with the stomach gases and banish the disagreeable bilious headaches.

Mrs. J. C. Kidd, Sperling, B.C., writes: "I have used Milburn's Laxa-Liver Pills for bilious headaches. I suffered awfully until I started to take them. They were the only thing that ever did me any good. I never have any bilious headache any more."

Milburn's Laxa-Liver Pills are 25c per vial, 5 vials for $1.00, at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

How does it Look to You?

Is it a good old world, or are there deep, dark shadows all over it? Are the people in it a jolly set, or are they a pack of fools and knaves? Are you getting along beautifully with what you have, or are there a thousand things you want which are just out of your reach?

Well the answer lies a good deal with you. Perhaps I ought to say, it lies wholly with you, but I will not. The way the world looks to us depends very much on what happens to us in it, and a good deal more it depends upon our bodily conditions. Sluggish livers and overworked stomachs make everything seem dark. Foul air breeds not only physical disease, but evil thoughts and morbid tendencies as well. A starved condition of mind often accompanies an underfed body, while an overfed stomach is quite as disturbing to one's outlook.

People sometimes complain of a lack of cleanliness among the poor, and the slums are referred to as "crime breeders." Perhaps both accusations are true, but how many baths a year would you take, where they from six to a dozen people in two or three rooms, or in a house where the average temperature is conducive to keeping on all the clothes you have, all the time? And is there not a natural relation between impure bodies and impure minds?

That virtue flourishes as it does, in spite of conditions in the poorer districts of our cities, speaks well for the human race, and God's watchful care over it. If it seem not so to you, go and dwell for a time in some overcrowded tenement district, living as the people there live, then for a like period stay in a beautiful, healthful country home. Environment more often than not determines character and achievement. Pure air, moral and physical cleanliness, are close friends; out of their union comes self-respect and from self-respect springs whatever there be about us that commands the respect of others.

Physical and Mental Causes.

Why do we become cross and irritable, nervous and pevish? Why, because in some way we are uncomfortable. The cause may be physical or mental, or both. Quite as often we find discord amid a plethora of the good things of life, as where there is a dearth of them. Those who herd closely together see too much of one another's way. What wonder, then, if inharmonious conditions arise?

Selfishness has a good deal to do with people's failing to get along comfortably together, but it is not the only cause. There are people whose presence seems almost a poison to some of those about them, and for such to be thrown constantly together is detrimental not only to the happiness, but to the health of one, or both. It is not good even for men and women who love and admire one another to be in too constant association. For the soul's good, we must sometimes be alone, absolutely free from people and their influence.

No stronger assurance of lasting happiness in wedded life can be found than when husband and wife sometimes lose sight of one another for a time. The joy of reunion is well worth the sacrifice. Interest in other people creates new interests for those who exercise it. The love shared with others redounds tenfold to those who bestow it. On more than one occasion it has been demonstrated that people who secured divorces did not really want them after all. What they wanted was only a break in the monotony, or a chance to get temporarily away from too constant sight and sound of one another. When the law gave them what they supposed they wanted, there was no happiness until it had again granted them permissions to go their way together.

One would suppose that for people of means there need be no cause for discord and discontent, but often there is. True. they enjoy greater freedom of life and possess the ability to gratify every mood and whim, but in this very freedom lies danger. "The jaundiced eye" cannot see things other than awry, and nothing is more conducive to perverted outlook than a super abundance of money and leisure Too often undesirable habits are the entering wedge. It seems a perversity of human nature. "Ne'er to see well what we're standing on," and the forbidden appears preferable to that which is ours. Society life, too, tends to "nerves" and a thoughtless, flippant manner, and mistakes are so easy to make. Everything to eat and drink and wear, and nothing to do, is a bad combination.

Nova Scotia Man Has Good News

FINDS IN DODD'S KIDNEY PILLS A CURE FOR HIS RHEUMATISM

States Out of His Own Experience That Dodd's Kidney Pills Are a Sure Relief From Pain.

Greenfield, Queen's Co., N.S., April 4th (Special.)—"To anyone who suffers from rheumatism I say: 'Take Dodd's Kidney Pills.' They will be sure to give you a release from pain." This is the message of Cornelius Hirtle, a well known farmer living near here. Mr. Hirtle suffered from rheumatism for four years and found a cure in Dodd's Kidney Pills.

"I was in bad shape for four years," Mr. Hirtle says in giving his experience. "My back and hips troubled me so much that I was not able to do much without suffering. I also had stiffness in the joints, my muscles cramped and I felt heavy and sleepy after meals. I had a better taste in my mouth, especially in the morning. My appetite was fitful and I was often dizzy.

"I suffered from shortness of breath, I was often dizzy and I was depressed and low spirited.

"I took six boxes of Dodd's Kidney Pills and they did me so much good that I am recommending them to all my friends. They are better than any doctor."

Ever one of Mr. Hirtle's symptoms was a symptom of kidney disease. That's why Dodd's Kidney Pills cured him.

YOURS TO ENJOY

You'll Like the Flavor

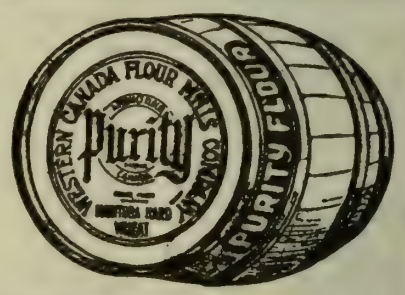
40c, 45c, 50c per pound

Health and a Sense of Humor

Good, red blood in a well-poised, well controlled body, accompanied by a clear brain and a clean conscience, will always cause the world to seem good, or give assurance that it is improving. To the healthy, happy man, petty irritations have no sting, or dwindle into insignificance, and no situation is so bad it cannot be bettered. If health be yours, rejoice and be glad; if it be not, rest not until you have made it yours.

A sense of humor, too, is a possession of inestimable value. Many a time has it saved a dangerous situa-

If this name is on the barrel you can buy with confidence.



PURITY FLOUR

More Bread and Better Bread

720

More Potato Profits

MACHINERY may make all the difference between profit and no profit in growing potatoes. Get the right ones. We make complete lines of planting, weeding, cultivating, spraying, ridging and digging tools, all of which we guarantee. '80 years of factory and farm experience back of them. We'd like to tell you about all

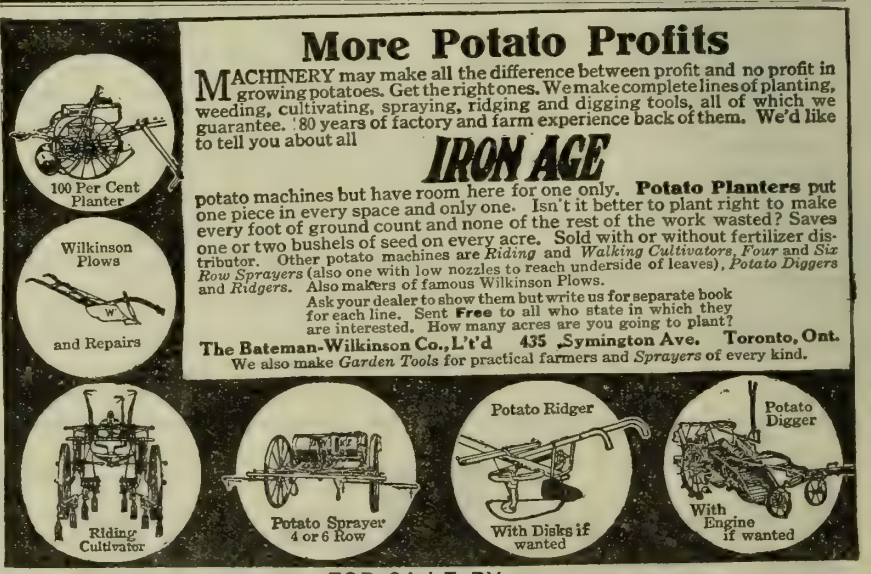
IRON AGE

potato machines but have room here for one only. **Potato Planters** put one piece in every space and only one. Isn't it better to plant right to make every foot of ground count and none of the rest of the work wasted? Saves one or two bushels of seed on every acre. Sold with or without fertilizer distributor. Other potato machines are *Riding* and *Walking Cultivators*, *Four* and *Six Row Sprayers* (also one with low nozzles to reach underside of leaves), *Potato Diggers* and *Ridgers*. Also makers of famous Wilkinson Plows.

Ask your dealer to show them but write us for separate book for each line. Sent **Free** to all who state in which they are interested. How many acres are you going to plant?

The Bateman-Wilkinson Co., L't'd 435 Symington Ave. **Toronto, Ont.**

We also make *Garden Tools* for practical farmers and *Sprayers* of every kind.



FOR SALE BY

J. CLARK & SON - - FREDERICTON, N.B., AND WOODSTOCK, N.B.
THE LOUNSBURY CO. - - - - - - - - - NEWCASTLE, N.B.
BLIGH & PRINCE - - - - - - - - - - TRURO, N.S.

Worms are Enemies of Children

Worms are one of the most dreaded diseases of children. There is nothing better than Dr. True's Elixir to expel worms of all kinds and to keep the stomach in good order. First manufactured by my father in 1851. Our mothers and grandmothers used this remedy and found it to be ideal for its purpose.

Trade Mark

Some of the signs of worms are: Deranged stomach, furred tongue, belching, variable appetite, increased thirst, acid or heavy breath, nausea, enlarged abdomen, variable bowel action, pale face of leaden tint, bluish rings around eyes, itching of nostrils, languor, irritability, disturbed sleep, grinding of teeth, irregularity of pulse.

If your child is not one of the robust kind, start in to use Dr. True's Elixir, the Family Laxative and Worm Expeller, today. 35c, 50c and $1.00. Advice free. Write me.

Knowlton, Que. Dr. True

A Successful LUMBER SEASON if YOUR EQUIPMENT is RIGHT

We would like you to try our Lumbering Machinery.

A trial order would, we feel confident, be to our mutual advantage.

While we SPECIALIZE on Haulup Equipment and Lath and Shingle Machines, we are ready to give PROMPT SERVICE in any line.

Saws, Pulleys, Shafting, Belting and Babbitt STOCKED.

The Smith Foundry Co., Limited,
Fredericton, N. B.

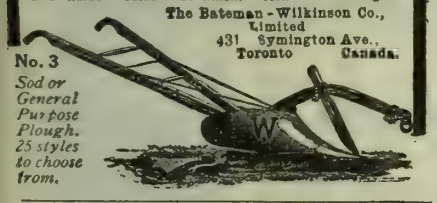
TRADE MARK

Ploughs—Wilkinson

REGISTERED

U.S.S. Soft Centre Steel Moldboards, highly tempered and **guaranteed** to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plough is fitted especially with its own pair of handles—rock elm, long and heavy and thoroughly braced. The long body makes it a very steady running plough. Shares of all widths—specials for stony or clay land. The plough shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for catalogue.

The Bateman-Wilkinson Co., Limited
431 Symington Ave., Toronto Canada.



No. 3
Sod or General Purpose Plough. 25 styles to choose from.

To whom it may concern: This is to certify that I have used MINARD'S LINIMENT myself as well as prescribed it in my practice where a liniment was required and have never failed to get the desired effect.

C. A. KING, M.D.

Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?

He spends one cent and makes four, puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
St. John, N. B.

for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

tion, eliminating from it what, under other circumstances, would have caused heartache or a burning desire for vengeance. To some, it seems a gift denied. God pity the man who has neither imagination nor humor. "Life is real, life is earnest," yet in spite of its serious phases it is exceedingly funny, too.

"This world is what we make it," but habits and environment largely determine what we shall be. To the chronic dpspeptic, the world will never look good. Fiery alcohol, soggy bread, foul air, and a lowered vitality, all warp the outlook and disposition, and determine the degree of success or failure. There are even those who claim that surgical treatment, not penal servitude, is the proper corrective of morals. At any rate, one judge in Michigan believes so, and his theories seem to have worked out pretty well, so far. It is not, however, a universal panacea with him. He picks his men.

Environment is a potent factor in men's lives, yet it is not all. Many have risen above it, and many more might have done so. Whether you or it conquers depends, largely, on strength of character, and a strong will is seriously handicapped unless backed by physical strength and vitality. Perhaps you are not sure of yourself; if so, it may be best for you to seek other surroundings, but in doing so, bear in mind that in putting aside this effort to conquer adverse circumstances, you are losing one of life's purest sources of joy.

Unpleasant though they be, hard knocks are conducive to strength. Snubs and persecution and ostracism, while seeming almost unbearable at the time, are worth enduring in a righteous cause. The brave man is he who dares stand alone, if need be, and sooner or later even those who now heap scorn and ridicule on him will gladly follow where he leads.

This is the best world you will know this side of the grave, and unless you mend your ways, it may be the best you will ever know, so why not take the best it has to offer? Only, however, as you give in exchange your very best, will the best come to you. God has alotted to you a span of years in which to live and enjoy. Take heed how you spend those years. Men pay for their follies and sins, and the day of reckoning comes at a time when they wish not.

Peace, honor and contentment are his only who orders his life aright. If to you the world seems good and howbright and true, it is because you are good and bright and true, because you understand how to obtain from it its sweetness and goodness, its gladness and worthwhileness. If to you it seems none of these, then is your perspective wrong, your vision distorted. God made this world for our physical and mental well-being, and, too, He made it but the vestibule to a world immeasurably greater and better. So "look not through a glass darkly," neither blind spiritual vision by wrong and sin or petty strife and inharmonious living.—Eva J. DeMarsh, Michigan.

Health Notes.

It is a mistake for the stout person to refuse to eat fat. Starches and sugars, represented in such vegetable foods as bread, rice, tapioca, and the like are fat formers. The living body has a power of making fat out of that which is not fat. And with this point is another—that fat itself does not go directly, at least, to make a valuable addition to the diet of a corpulent person because it has a power properly administered of burning off food excess. In more than one system of body reduction fat is, therefore, administered as an essential part and parcel of the diet cure.

It pays to Underdrain

The illustrations here are drawn from an actual photograph

The large plant was grown in soil that was drained three feet deep. The smallest plant was only drained three inches deep

The soil in the other cans was drained respectively—two feet—one foot—and six inches.

What better proof than this do you want of the value of drainage?

The Government Agricultural College will send a man to your farm to survey it and plan out a drainage survey for you, showing where to run it—how to run it—what to do—and the size of tile to use. All this at no cost to you, except the expense and the railway fares of the man.

For any ditching or draining down to a depth of two to three feet the MARTIN cannot be beaten.

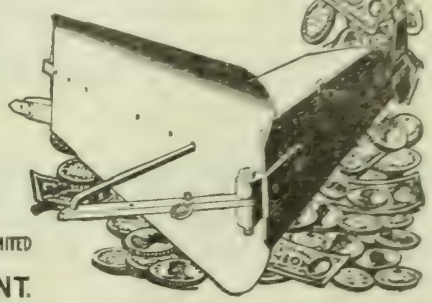
The MARTIN Farm DITCHER and Road Grader

(PATENTED)

will do as much work in one day, as fifty men can do with picks and shovels and do it better.

No farmer should be without it. It is a necessary part of every farm equipment. Its first day's work will pay for itself. It is very simple and will last a life time.

It is used for tile draining—all kinds of open ditching—road grading—for cleaning out ditches—grading up low ground—filling up gulleys—grading up your roads and driveways—landscaping, etc.



And the price only **$47.50**

Don't delay, but investigate at once. Write to-day for illustrated booklet.

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The largest manufacturers of Roofings, Wall Board and Roofing Felts in Canada 101

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Try Neponset Wall Board in place of lumber or lath and plaster—you'll like it.

Mother Hubbards Ironing Day

(Continued from Page 431.)

to another, and "Hang on to your hat," to still another. This all made me guess at the different relations he had with each young lady. Now it was the same young gentleman all the time and the difference must have been in the girls. I came to the conclusion that this young man anyway gave his friends the amount of respect, admiration or familiarity the girls taught him by their own conduct. A girl gets generally what she gives in familiarity. If she gives quietness and respect she receives the same; if she is flippant and familiar she may expect her friends to treat her lightly. Of course I'm old but I admired the quiet-mannered girls the most.

The Broken Glass.

Just here I hard a smash, so I left my ironing to see. A broken drinking glass and a baby in tears I found. "Don't cry, baby," I said, and picked up the pieces in one hand and the baby on the other arm. Life is too short to cry over broken things; broken dishes, broken promises or broken hopes. All we can do is clean up the mess and go back to work. No one likes to break things and once they're broken what's the use of fussing? I count it my fault if baby breaks things as I should know better than let her have things breakable where she can reach or get at them. I lock them up.

Making Life Beautiful.

So I got back to my ironing. I was now at the white aprons. A white apron is a nice thing when well ironed. Its moral effect, too, is very apparent. Take a fussy child and wash its face and put on a clean white pinafore and the child nearly always responds and is happy and peaceful. Clean, smooth clothes help us morally to be our best. I heard a man say once, "One of the big benefits of Sunday to humanity is that it all has a wash and gets on clean clothes. It increases the sum total of goodness, peace and happiness."

Whenever I'm especially tired I go, wash, and put on a fresh, clean dress, do my hair softly and if possible add a little perfume. It's amazing how much beeter I feel. There is much virtue in clean, well ironed clothes. So I faithfully ironed and put the polish on as I meditated.

Ironing Out the Creases.

There is another kind of ironing that is refreshing also. That is ironing out the creases that wear has put in. An old garment is renewed by it every time. Men especially like their things pressed often, and they should have them so as they cannot have the variety in clothes most women have.

There are other creases of wear, too, we can smooth out. Creases of worry on our friends face; creases of pain on our child's brows; creases of overwork in our neighbor's firm set mouth A little love, a little kindness, a funny story, a happy smile and the will and the action to help carry their load will smooth out these human creases and add much to the sum total of happiness about us. Is it worth while? It sure is.

—Farm and Ranch Review.

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are light weight, comfortable, durable working shoes for spring, summer and fall wear. Sold by leading dealers everywhere. If your merchant does not carry them write us, giving his name and address, and we will see that they are placed within your reach. Made 4, 6 and 9 inches high. 19

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Folding Preginant Ewes

(Continued from Page 423.)

includes lack of exercise associated with folding on roots. Exercise s absolutely essential to the maintenance of health in the pregnant ewe and the proper development of the foetus. This is recognised by the sheepowner, and an endeavor is generally made to provide for it by removing the ewes from the folds during the few hours of daylight, and returning them again at sundown. But the animals freely supplied with roots do not keep moving about on the pastures as is their wont when dependent on grazing, and they soon acquire the knowledge that in a short time they wil be taken again to the roots left in the morning. Thus they lie about until this time arrives, when, with appetites quickened by their self-imposed fast, they have aonther gorge. Circumstances alter cases, and the character of the land varies in different parts of the country. But look at the state of the folds in wet weather on the heavier kinds of land. Are they fit, when fetlock-deep in mud, for animals heavy in lamb to spend from 16 to 18 hours out of the 24 in?

Evil Resultnig From It.

Th late Professor Robertson said: "There are at least two or three affections common, or rather prevalent, among our better-fed ewes and on our best lands, easily enough traceable to the repeated gorging or filling to repletion of their digestive organs. Of these the most common, and the least difficult to understand, is a rupture of the muscular walls of the abdomen. It is frequently associated with the presence of one or more dead foetuses, and attended with danger to the ewe in the accomplishment of the act, of parturition. The manner in which these results are reached is purely, or nearly purely, mechanical. The ewes thus affected are usually those with twins or triplets. As gestation advances the weight and bulk of the gravid uterus, added to the large bulk of innutritious food which the stomach contains, prove too much for the resisting power of the abdominal walls. This same distention of the digestive organs with a bulky material considerably below the normal temperature of the animal's body, and the accompanying pressure exercised on the gravid uterus, is largely productive of arrested foetid development and the occurrence of premature births." Prolapsus vaginae or protrusion of the genital passage—a common subject of question in these columns when ewes get near to lambing—is also traceable in great part to similar causes.

A Bad Lambing Time.

But how can this or any other bad system of feeding cause a bad lambing-time, or affect the "luck" at this season? Arrested foetal development means the death of the lamb in utero. Sometimes abortion occurs, but in most cases, where the ewe is concerned, the dead lamb or lambs are carried the normal period of gestation, or beyond it, and the results are far worse than those associated with abortion, which is very rarely productive of serious or dangerous conse-

quences to the ewe herself. Even the production of a greater or less number of dead lambs, where there are numerous twins and triplets, would be of small moment were it not connected, as the exciting cause, with the death of the ewe. This it causes from the prolonged retention of the dead foetus, the manual interference necessary to get it away, and the retention of the foetal envelopes, which, becoming decomposed and absorbed by the system, produce low putrid fever or septicaemia, certain to result in serious consequences to an exhausted animal, and one whose bodily condition is sure to be anaemic from having been largely fed on material containing an excess of water and a deficiency of nutritive matter. The lamber under such circumstances becomes contaminated with septic matter, a veritable walking source of infection to healthy ewes that he feels himself called upon to assist when in labor. Almost every ewe does require assistance, numbers bring one or more dead lambs, the ewes are weakly and unable to do justice to the survivor, they discharge for weeks a stinking matter that is highly debilitating, require special feeding to get up their strength, and numbers die, the mortality comparing with that of a maternity hospital in the "good old times" for which some of us affect to pine. It recognised that there is a difrence in turnips, but all roots contain a percentage of water that is far too high to furnish an ideal food for a pregnant animal. No one pretends that a few roots are dangerous to in-lamb ewes, that they may not be fed with safety in moderation, indeed with benefit, but we have seen recorded and personally had to do with too many cases of disastrous lambing in large flocks not to be convinced that there is danger generally in a large supply of turnips for in-lamb ewes.—Veteran, England.

Lime and Soil Productivness

(Continued from Page 414.)

Agriculture," by Harlow, appearing in the Annual Report of the Secretary for Agriculture, Province of Nova Scotia for 1915.

Further tests were tried at the College at Truro in 1915 on mangels and turnips. In the mangel exp riment, an acre of land was divided in two parts, the whole acre was treated with barnyard manure and one thousand p unds of acid phosphate per acre. On one-half of the acre marl, or limestone, was applied at the rate of four tons per acre, and on the other half no marl was used. The yield on the marled half was at the rate of 98 bushels per acre extra.

In the turnip experiment, which was an exact duplication of the mangel experiment, the yield on the lime plot was at the rate of 20 bushels per acre extra, which extra yield is so small that it might be accounted for by natural difference in the areas upon which the turnips were grown.

Expriments with garden crops gave somewhat uncertain results. Certainly one could not infer from them any decided advantage from the application of lime. Our present experience at the College Farm leads us to advise farmers to use limestone largely for seeding down purposes and to expect to get their big returns from the growth of clover and the subsequent enrichment of the soil. It is our belief that if the land is left down to clover and subsequent hay for a number of years, the ultimate results will be very unsatisfactory, but if a short rotation is practiced and clover sown once every four or five years, we expect that lime will prove the means of building up our soils.

CAN LIME RESTORE WORN OUT LAND TO ITS ORIGINAL FERTILITY?

No. Manure or some commercial fertilizer must also be used. The lime will correct the acidity, will improve the texture and generally make the soil more responsive to manure and fertilizer. On the other hand, manure of fertilizer cannot be used to correct the acidity. But the combination of the two, i.e., lime with manure or fertilizer and the subsequent clover and rotation of crops will pave the way for fertile fields and productive farms.

I cannot too strongly urge the point that while lime will assist in improving the productivity of soils, it is not a fertilizer and will not take the place of fertilizer. Used alone, on a fairly rich soil, it will give fairly satisfactory results for a year or two, but on the average soil the results are bound to be disappointing unless one knows what to expect. Used, however, along with barnyard manure, or commercial fertilizer and a proper rotation of crops lime, preferably ground limestone, will I am convinced, prove a most practical means of building up fertile soils in the Maritime Provinces.

How can a farmer know whether the application of limestone will pay or not?

Ans.—Ask the soil. In other words try it. Each farmer, who possibly can, should apply ground limestone to small areas on several fields of his farm at the rate of 4 tons per acre.

(Continued on Page 438.)

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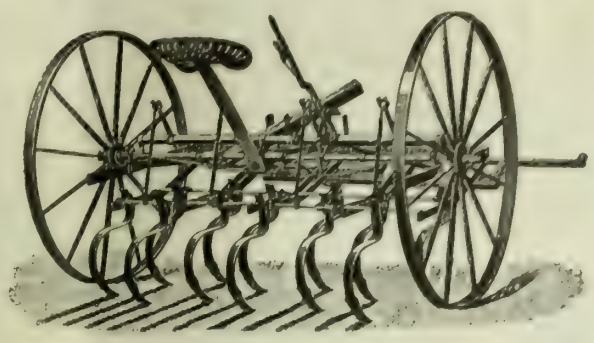

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Try an Ad in the FARMER

System of Buying Milk.

A few years ago by far the larger proportion of milk handled by city dealers was brought from the producer on the basis of the measure, that is, the can and the gallon. Dealers as well as producers have come to recognize the inaccuracy of this system and its unfairness, both to themselves and to the farmers, so that in recent years the tendency has been to abandon it and adopt systems that are more nearly equitable and at the same time practicable.

Among the systems now comomnly used are the following:—

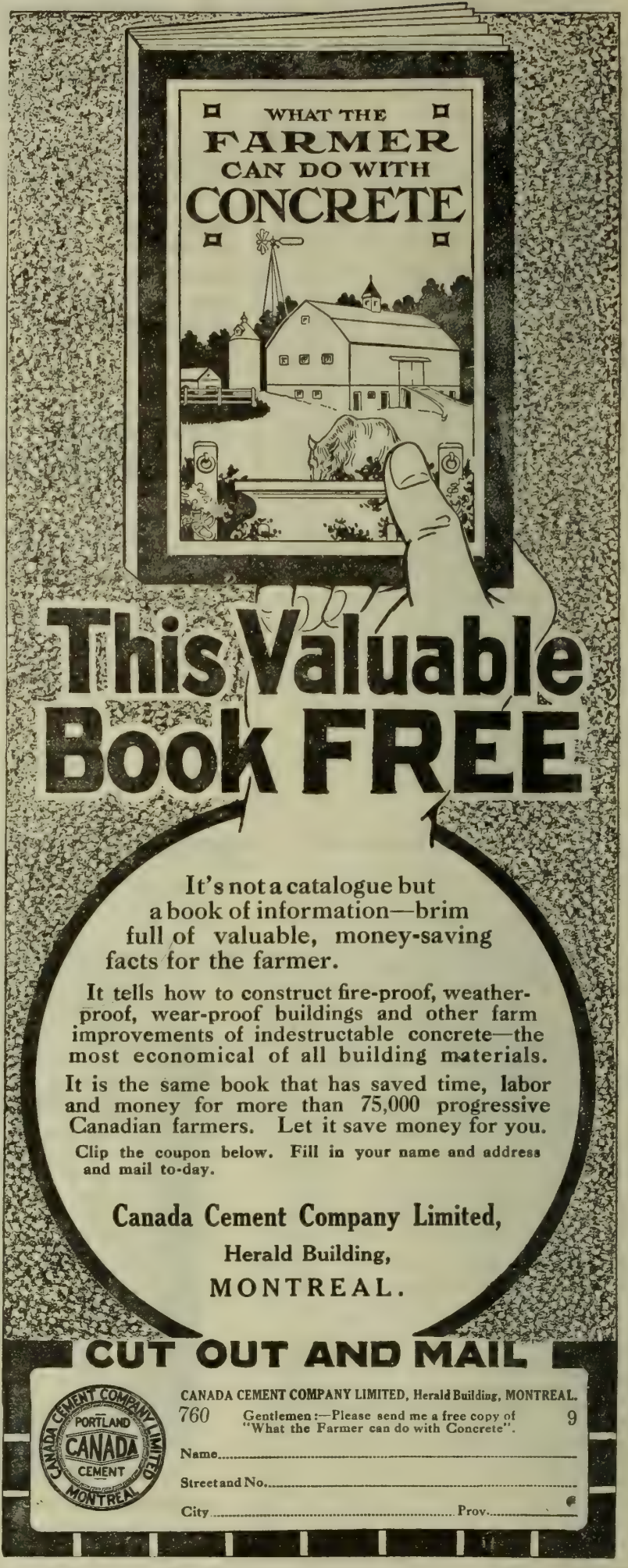
1. By the quart or gallon.
2. By the can, the size of the can varying from 8 1-2 to 40 quarts or more.
3. By the can; the can of milk must come up to the standard weight.
4. By the can or the gallon, with a minimum standard for butterfat, with a definite premium per gallon for each one-tenth per cent butterfat above standard.
5. By the gallon, the number of gallons being determined by dividing the weight by 8.6.
6. By weight, which is determined by the number of cans, each can being supposed to hold a certain quantity of milk by weight.
7. By weight, the milk being weighed at receiving station or at city plant.
8. Same as No. 4, with a minimum standard for dairy farm score, and premium for extra points in this score.
9. A certain price for a pound of butterfat and for 100 pounds of skimmed milk.
10. Same as No. 9, only the weight of the whole milk is considered instead of the skimmed milk.
11. On the weight basis, with a minimum standard for butterfat and premium for extra points. Sometimes the butterfat standard is established and deductions made for each one-tenth per cent below this standard as well as premiums for each one-tenth cent above it. In some cases the premium is paid only for milk of three-tenths per cent or more above the standard, while the deductions begin at one-tenth per cent below.
12. A certain price per 100 pounds, depending on the per cent of butterfat, allowing 3 cents per one-tenth per cent butterfat above or below the base price for the month for 100 pounds in summer and 4 cents in winter. (Base price for each month is from the average per cents of butterfat contained in the milk for those months for a period of years). Milk below 2.8 per cent butterfat is paid for on the basis of sweet-cream fat. Deduction is made for milk of solids not fat below 8.5 per cent.
13. A certain price per cent butterfat per gallon.
14. Grading of milk and paying from 3 to 4 cents per one-tenth per cent butterfat per 100 pounds for B grade: grades to be determined by (1) bacterial content of the milk; (2) sediment test; (3) acidity; (4) flavor and odor; and (5) temperature on arrival in city. For grade A milk a premium of 5 cents per 100 pounds is added; for grade C milk a reduction of 5 cents per 100 pounds is made from grade B prices. Should milk from a producer grade C for two successive months the dealer may cancel the contract.

In some cases in which milk is bought on the basis of the dairy farm score the farmer is allowed to score his own dairy.

When special milks are desired, other requirements are often made of the farms, and they are paid in proportion; for example, the tuberculin test is sometimes required.

When milk is bought by weight, it is necessary, from time to time, to test the scales used in weighing it.

There is no doubt that milk should



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be bought as much as possible upon the basis of quality. The farmer who sells clean milk should get more than the one whose milk is dirty, and it is seldom questioned that the weight and the butterfat systems of buying are the proper ones. Of course it takes time to establish a new system of buying in any locality. The farmers are accustomed to the old system and are often loath to take up with new systems, although clearly to their advantage. Dealers, however, are working more and more in this direction and the time seems to be approaching when all milk will be paid for on more uniform and equitable bases — Milk Plant Letter 23, U. S. Dairy Division.

Scurf on a Horse.

Can you tell me the remedy for scurf on a horse? Every attention has been given in the matter of feeding and grooming, and he is in first rate condition, but he is covered with fine scurf, with here and there lumps of scurf, and in places the hair comes off, or can be pulled off with ease. He has been in this condition for 12 months, and I have given him Epsom and sulphur frequently in small doses, hoping to get him right, but with no good result. I take it, therefore, that there is some disorder of the blood.—E. B.

The common names for this trouble are blotch, surfeit, etc., and it is usually more often noticed in the early spring of the year. When these eruptions have remained a few days the outside skin peels off, leaving a small scaly spot, but rarely a sore. It may be occasioned by over-feeding, etc. You say that he is in firct-class condition. You should not let him have maize, beans, or much clover hay. Let him have about 6 lb. of crushed carrots daily, also daily exercise. The first fine day have the hair washed all over with soft soap and warm water to which has been added some Lysol or Jeyes' fluid. Have him dried and then well rugged up. Often a good sweating will get a lot of it out of the coat. Give once a week three or four ounces of Glauber salts and a quarter of an ounce of nitre in a bran mash. See that the horse has a piece of rock salt in his manger and is not being fed too generously for the amount of work required daily.—Southern Vet.

How to Bring the Hay Fork Back to the Load Easily

One L of the principal barn on the Hoard's Dairyman farm is ninety feet long an dthe hay fork has to travel the distance to deposit its load at the farther end. Consequently it is hard for the men on the load to pull that fork an dthe heavy rope back to the load. Thinking of this one day, we saw a way of making the horses that work the hay fork, pull it back to the load when they returned to the barn.

To do this we added ninety feet to the trip rope and run it through a small pully fastened to an iron stake in the ground, placed just where the horses stopped when the fork was dumped. At the end of the trip rope was a hook. When the horses stopped th end of the trip rope was there. The driver hooked it into the clevis of the evener and the horses pulled the fork back to the load as they returned ot the barn. It proved a great labor saver and the cost was trifling.

For a blistered heel, scrape a little yellow laundry soap to a paste with a Very little water, and apply to the spot. As a preventive, thoroughly soap the inside of the heel before starting out on a long tramp.

Raw beef applied to the afflicted part affords a speedy relief when severe inflammation seems to threaten appendicitis. This has been tested recently by a physician.

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Lime and Soil Productivness

(Continued from Page 435.)

Use it preferably on land which is being seeded down to clover. It will take two seasons before you will get results, but then you will know. In the meantime I would strongly warn farmers not to expect limestone to take the place of manures or fertilizers which they have been using. It will not, all of which means that the farmer must get his limestone at a low price per ton. Finally, I am bound to commend the progressive measures which the New Brunswick Department of Agriculture has taken to make this experimentation easily possible for farmers. Address by Prof. M. Cumming, Truro, N. S., before the recent annual convention of the New Brunswick Farmers' and Diarymen's Association at Fredericton.

N. B. Potato Growers Convention

(Continued from Page 415.)

2.30 p.m., Mr. C. M. Shaw, of Hartland, in the chair.

The first item was an address by Professor William Stuart, Horticulturist in charge of Potato Investigations, of Washington, D.C., on "Potatoes." The address was illustrated by lantern slides, which dealt with the different phases of breeding and selection work n potatoes. Professor Stuart has had many years experience in this line of work, and in a very interesting way, described the methods adopted in obtaining crosses of different varieties with a view to greater production.

At the conclusion of Professor Stuart's address, the report of the nominating committee was handed in which contained names of the following gentlemen as officers of the Potato Growers' Association for the ensuing year:

President, Mr. T. W. Caldwell, Florenceville, N.B.

Vice-President, Mr. Donald Innes, Tobique River, N.B.

Secretary, Mr. G. C. Cunningham, Fredericton, N.B.

Treasurer, Mr. W. H. Moore, Scotch Lake, N.B.

Auditor, Mr. C. M. Shaw, Hartland, N.B.

It was moved by Mr. W. W. Hubbard, seconded by Mr. W. E. Palmer, that the report of the nominating committee be received and adopted. This was carried unanimously and the meeting was then thrown open by the chairman for general discussion, which was taken part in by the majority of those present.

A vote of thanks was tendered the speakers, especially to those who had come long distances from outside the Province to be present. Towards the close of this meeting 50 of those present signed the register as members of the new-formed Association, and the prospects are bright for many more enrolling in the near future, the objective of the Association being to reach every grower of potatoes in the Province by enrolling them as members, either of the main Association or of the main Association or of Sub-Societies which it is proposed to form in each community.

On motion of Mr. B. M. Shaw the Maritime Farmer was unanimously chosen as the official organ of the Association.

The fifth and final session was held at 8.00 p.m. in the Hayden-Gibson theatre, and the addresses given were interspersed with a musical programme which was kindly arranged for by Mr. C. O. MacDonald, Manager of the Royal Bank of Canada, Woodstock, who was also the accompanist of the evening. The numbers were: A song by Mrs. Squires, two songs by Mr. Harry Dunbar, a well-known local impersonator of Harry Lauder, and two splendid violin solos by Lieut. Carleton Brown, C.A.S.C.

The first address was on "The War," by Mr. J. D. McKenna, Business Manager of Maritime Farmer. Mr. McKenna is a forceful speaker and has evidently made a close study of past and present conditions connected with the struggle in which the Empire is now engaged.

Mr. J. H. Grisdale, Director Dominion Experimental Farms, was the next speaker. His address was entitled, "Patriotism and Production." Mr. Grisdale is well known from one end of the Dominion to the other, and in a very forceful address he showed how agricultural production may be increased, especially at this time when every available acre of land should be utilised for the production of food supplies. He also gave an interesting account of the assistance the Federal Department of Agriculture is affording to farmers in the Dominion through the medium of the Experimental Farms and invited correspondence from all who might be looking for help and guidance on any agricultural subject.

Any information with regard to the Association may be obtained by writing Mr. G. C. Cunningham, Secretary, Fredericton, and it may here be mentioned that the "Maritime Farmer" has been adopted as the official organ of the Association and will contain news from time to time regarding the activities of this organization as it becomes available.

It is hoped that all potato growers and anyone interested in agriculture will get in touch with the Association, either by becoming members or applying at any time for information. It has been organized to promote the interests of the potato industry in the Province, by disseminating informaation on methods of cultivation, suitable varieties, seed improvement, grading and standarizing, marketing and eradicating and controlling fungus and insect diseases and other allied subjects. It has adopted a wide and efficient policy for the improvement of the potato crop. During the coming year, special attention will be paid to potato improvement for seed and table stock, through keen selection and the control of potato diseases. It is hoped to accomplish this task by the members of the Association conducting co-operative experiments along several lines. The outlines of these experiments will be published in the "Maritime Farmer" at an early date and all who are interested are invited to take up some line of work.

The Association is indebted to the Provincial Department of Agriculture for having financed this initial Convention and for the support and encouragement which they are willing to give towards the improvement of the potato industry.

GEO. PARTRIDGE,
Acting Secretary.

CONSTITUTION AND BYE-LAWS.

Article 1. Name.

The name of this organization shall be, the New Brunswick Potato Growers' Association.

Article 2. Object.

This Association has been organized to promote the interests of the potato industry in the Province of New Brunswick. It shall be the object of the Association to assist in the dissemination of knowledge on methods of cultivation, suitable varieties, seed improvement, grading and standardizing, marketing, eradicating and controlling fungus and insect diseases, and other allied subjects.

1. By collecting and disseminating the best available information relating to both the practical and scientific phases involved, in increased yields coupled with a lessened cost.

2. By encouraging proper cultural practices in relation to the maintenance of soil fertility through the proper use of fertilizers and by promoting the introduction of modern potato machinery.

3. By encouraging the cultivation of pure varieties of potatoes for all commercial purposes.

4. By giving special attention to seed improvement, to the dissemination of standard commercial varieties and by encouraging the elimination of

Farmers' Clubs Find Us Satisfactory

We are doing a splendid trade with Farmers' Clubs and our

Cream of the West Flour

the hard wheat flour guaranteed for bread

is giving every satisfaction. For example, here is a letter received from Mr. Hester W. Healy, Secretary of the Cleveland Farmers' Club, with headquarters at Richmond, P. Q.

Dear Sirs :—

I wish to say that you have given us the very best satisfaction, and the quality of feed and flour has been fine. We may not order any more this Spring, as we think that we will have enough to carry us through to grass. If we find that we can use another car this Spring we will certainly give you the order. We will be in the business next Fall again, and will very likely use more next season than this.

Our ***Cream of the West*** is a strong, nutritious, light-raising Western Wheat flour that makes the finest of home-made bread.

Queen City Flour is a blend of Ontario and Western Wheat—an excellent all-round bread and pastry flour.

Monarch Pastry Flour is milled from Ontario soft wheat exclusively for pastry purposes.

Write for quotations on flour, cereals and feed direct to

The Campbell Flour Mills Co., Ltd.

(West) TORONTO, CANADA

or to our special representative

H. E. RAINS, 112 Lawrence St., Halifax, N. S.

undesirable commercial types.

5. By encouraging the community plan of raising desirable varieties (one or two varieties to a community.)

6. By encouraging the grading, standardizing and certification of table and seed varieties.

7. By investigating the demands of all available markets and assisting New Brunswick growers to meet such markets.

8. By assisting in controlling and eliminating fungus and insect pests and in preventing the introduction of new diseases.

9. By investigating methods for the profitable utilization of surplus and cull potatoes.

Article III. Association Work.

Clause 1.—The Association shall hold an annual Convention and shall provide a special programme of topics related to the potato industry, and it is recommended that a potato exhibit be held therewith.

Clause 2.—It is further recommended that the Association send an exhibit to the Canadian National Exposition at Toronto, Ont., and shall maintain a booth on the Exhibition grounds. It shall send exhibits to such other important Expositions as the Executive Committee may decide upon.

Clause 3.—The Association shall establish Sub-Societies and such other affiliations as shall be to the benefit of the potato industry, when deemed necessary.

Article IV. Organization.

Clause 1.—The organization shall consist of the New Brunswick Potato Growers' Association and Sub-Societies.

Clause 2.—The Sub-Societies shall be formed in isolated districts having one centre and local interests.

Clause 3.—The boundaries of the Sub-Societies shall be defined by the Executive Committee.

Clause 4.—The Maritime Farmer shall be the official organ of the Association.

Article V. Membership.

Clause 1.—Potato growers and all commercial interests concerned in potato production, within the territory covered by the Association, are eligible for membership in this Association.

Clause 2.—Membership in the Sub-Societies shall constitute membership in the Association.

Clause 3.—Honorary membership may be conferred upon anyone interested in the advancement of potato growing.

Article VI. Officers.

Clause 1.—The officers of the Association shall consist of a President, Vice-President, Secretary, Treasurer and an Auditor, all of whom shall be elected by ballot at the annual Convention and shall hold office for one year, or until their successors have been chosen.

Clause 2.—The President, Secretary and Treasurer shall constitute the Executive Committee of this Association.

Clause 3.—The President shall appoint such committees as may be deemed necessary, subject to the approval of the Executive Committee, or the Association.

Article VII. Officers of Sub-Societies.

Clause 1.—The officers of the Sub-Societies shall consist of a President, Vice-President, Assistant Secretary and Treasurer, all of whom shall be elected by ballot at the annual Convention and shall hold office for one year, or until their successors have been chosen.

Clause 2.—The Treasurer of the Association shall serve as Treasurer of all Sub-Societies.

Clause 3.—The Secretary of the Association shall be Secretary (ex officio) of all Sub-Societies.

Article VIII. Advisory Board.

The Director of the Dominion Experimental Farms, the Dominion Botanist, the Dominion Horticulturist, the Superintendents of the Dominion Experimental Farms within the area, the Secretary of Agriculture for New Brunswick, the Provincial Horticulturisa and five members of the Association elected by ballot at the annual Convention, shall serve as an advisory board.

Article IX. Amendments.

The Constitution and Bye-Laws of this Association may be amended at any annual Convention by a two-thirds majority vote, provided notice of the proposed amendment has been submitted to the Secretary at least one month previous to the meeting. Members unable to be present may submit their votes in writing.

BYE-LAWS.

Article 1. Duties of Officers.

Clause 1.—It shall be the duty of the President to preside at all meetings of the Association, to appoint necessary committees and attend to such

(Continued on Page 442.)

$298 For a Separator

A Farmers' Startling Discovery.

Made in Canada.

THE other day a startling discovery was made by a leading farmer. He found that his cream separator had cost him nearly $300, and if he continued to use it as long as it would likely hold together (10 years or so) it would cost him altogether very close to $500.

This farmer milks 18 cows (good ones) for they average 6000 lbs. of milk each, yearly. Altogether he gets 108,000 lbs. of milk in the year. He skims that milk and sends the cream to the Creamery, getting about 25c per lb. for butter fat. So far, so good.

.16 per cent.

BUT ths farmer has discovered that his separator does not skim as close as a really good separator should. It leaves .16 per cent butter fat in the skimmed milk, and .16 per cent butter fat lost in 108,000 lbs. of milk amounts to 172.8 lbs. of butter fat. Figuring at 25c per lb. this means $43.20 lost on the herd yearly.

The loss on a separator, like the Standard, that skims to .01 per cent will be only $2.70 on the whole herd, so that the actual UNNECESSARY loss of this farmer is $40.50 per annum.

$40.50 x 6

This farmer has had the machine for six years and it has therefore cost him six times $40.50, a total of $243. The first cost of his separator, $55, added to $243 makes a total of $298, the actual cost of his machine to date. If he uses his machine four years longer it will have cost him $460, whereas the first cost of a good machine like the Standard, would be about $85.

How about your machine? Do you know how it skims? You may claim that what you don't know cannot hurt you. We assert that it is what you don't know taht does hurt you. The money value of the fat your separator leaves in the skimmed milk is lost just as much as if someone took it out of your pocket. An inefficient separator is just as much a thief as the slick pickpocket; a worse thief, in fact, because a poor separator keeps picking your pocket all the time.

On the other hand, a good separator like the Standard will put money into your pocket The

Standard

skims to .01%. This statement may surprise you, but Government Dairy School tests will prove it. No matter the season of the year, or the quality of the milk, or the breed of the cow, there is no separator made that can do better work than the Standard. We doubt if there are any that can be as well. We are always willing to have the Standard tested alongside other makes.

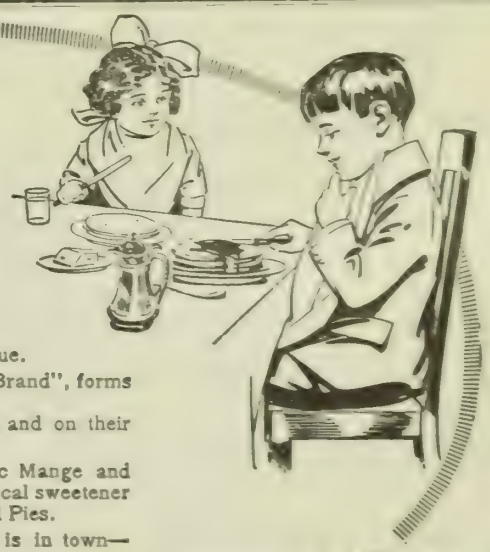
Full particulars about the Standard are given in our Separator catalog. Send for a copy. It's free.

The Renfrew Machinery Co., Limited, Head Office and Works RENFREW, - Ontario

Agencies almost everywhere in Canada. Office for the Maritime Provinces: SUSSEX, N. B.

Give the "Kiddies" All They Want of

CROWN BRAND CORN SYRUP



It is one of the delicious "good things" that has a real food value.

A slice of your good homemade bread, spread with "Crown Brand", forms a perfectly balanced food, that is practically all nourishment.

So—let them have it on biscuits and pancakes, and on their porridge if they want it.

You'll like it, too, on Griddle Cakes—on Blanc Mange and Baked Apples. And you'll find it the most economical sweetener you can use, for Cakes, Cookies, Gingerbread and Pies.

Have your husband get a tin, the next time he is in town—a 5, 10 or 20 pound tin—or a 3 pound glass jar.

THE CANADA STARCH CO. LIMITED

MONTREAL, CARDINAL, BRANTFORD, FORT WILLIAM.

Makers of "Lily White" Corn Syrup—Benson's Corn Starch—and "Silver Gloss" Laundry Starch.

220

Our new recipe book, "Desserts and Candies", will show you how to make a lot of really delicious dishes with "Crown Brand". Write for a copy to our Montreal Office.

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Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

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Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Oatt

C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BARRED PLYMOUTH ROCKS

We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

FREE--Handsome Mating List.

Rhode Island Reds, Black Minorcas, Red Sussex, Speckled Sussex, Buff Orpingtons, Spangled Hamburgs.

SEAMAN AND STEWART
Box 325 Moncton, N.B.

Fall Clearing Out Sale

First prize Registered Holstein Bull over two years old, $100.

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1.25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE:—500 Bushels Banner Oats, Improved seed. FISKE BROS., Florenceville, N. B.

FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

WOULD YOU MARRY IF SUITED?—Best Matrimonial paper published MAILED FREE.—THE CORRESPONDENT, Toledo, Ohio.

WHITE WYANDOTTES—Bred to lay and win. Eggs, $5 00, $3.00 and $2.00 per 13, according to quality.—CLARENCE FAWCETT, Sussex, N. B.

FOR SALE.—Five trios of Regal White Wyandottes, (Cockerel and Pullets), $5.00 per trio. Eggs for setting $2.00 per 15.—L.V. MATTHEWS, St. Mary's Ferry, N. B.

FOR SALE:—Pure bred white Orppingtons & Buff Cochen eggs for Hatching write for prices. F. V. BISHOP, Kilburn N. B.

FOR SALE:—Three Ayshire bulls fit for service Calves both sex all ages. Booking orders for Yorkshire pigs. JOHN A. HUGHES, Petitcodiac, N. B.

WE WILL PAY YOU $120. for sixty days work to distribute war literature. Man or Women. Spare time may be used. Winston Co. Limited, Toronto.

VALLEY FARM HOLSTEIN OFFERING—One pure bred bull, 13 months old, from good producing stock.—W. G. CAMPBELL, Salisbury, N. B.

BOYS AND GIRLS—Look I will pay you forty per cent for selling Easter Cards Write for particulars, Address EMERY H. SMITH Nauwigewauk, N. B.

BELVOIR FARM—Yorkshires of best breeding Five dollars five weeks, registered. Ayrshire bulls of all ages at right prices. R. J. MESSENGER Lawrencetown, N. S.

PORTRAIT AGENTS WANTED.—Send for catalogue, solar and bromide prints, portraits flat and convex, frames and war pictures.—MERCHANTS' PORTRAIT CO., Toronto.

WANTED.—Ladies to do plain and light sewing at home, whole or spare time; good pay; work sent any distance; charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

SENATOR DUNLAP STRAWBERRY PLANTS:—Booking orders now for this variety which has given general satisfaction in almost all sections and all kinds of soil, prices on application. RUFUS S. NEWCOMBE, Brooklyn Corner N. S.

REGISTERED CHESTER WHITE PIGS for April and May delivery. Pairs furnished not akin. Breeding stock bred by the best breeders in Canada.—W. S. COGSWELL, East Centreville, N. B.

FREE, to stockmen and poultrymen our 80 page illustrated booklet on feeding; how to construct a house which will accomodate 100 hens; gives dimensions and measurements of every piece of lumber required Deals with the common diseases of stock and poultry and the remedies. Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry foods and remedies.—THE W. A. JENKINS MFG CO., London, Canada.

GET YOUR NEW SUIT:—From Catesbys, London, England, for half what you pay local tailor. Best materials, style, fit guaranteed, or money back. Write for free Catalogue, self measurement form and patterns. Address CATESBYS LIMITED, CANADIAN OFFICE, 191 WELLINGTON ST. WEST. TORONTO. MENTION—Maritime Farmer.

SMALL ORCHARD FOR SALE:—On Avon River, Hantsport, Nova Scotia. Seven Acres with 60 apple trees, plums, cherries, pears, currants, raspberries, gooseberries, etc. Good house four rooms down stairs, four up stairs Hot and cold water in house. Excellent summer bathing. Splendid opportunity for market gardner. Only ten minutes to churches and station. Owner's reason for selling, ill health. For further particulars, apply to W. H. SWEET antsport, N. S.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

Percheron Stallion GLENEUR FOR SALE !

The Imported Percheron Stallion Gleneur has stood for service in and around Sussex for five seasons, where his get are in demand at the highest prices paid for draft horses in this vicinity. He must now be sold in order to make room for another horse to mate with his fillies. His get are active, trappy fast walkers and great workers.

Gleneur is a dappled grey, weighing 1750 lbs., is nine years old, gentle and a sure stock getter. Guaranteed sound in wind and limb. If you want to buy a stallion that will improve the quality of live stock in your district and prove a good investment for you, make inquiry about Gleneur before you place your order elsewhere,

Wm. Jamieson, - - Sussex Corner, N. B.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

HOLSTEIN BULLS AT BARGAIN PRICES

Two pure-bred, but not registered. Holstein Bulls. 16 and 18 months old. in excellent condition, fit for service. Just right for farmers who have only grade herds and wish to improve. These bulls will be sold at bargain prices. Write quickly if you want one of them.

A. HECTOR CUTTEN, - Inglewood Farm, Lower Truro, N. S.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.

PEN NO 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm,"
Oxford Junct., N.S.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00

Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

Registered Ayrshire Bulls For Sale.

Four P. B. Ayrshire Bulls. No. 1 is one year old. Winner of 1st Prize at last Exhibition. Dame produced 13183 lbs milk and 530 lbs butter fat in 12 mos. R. O. P. Test. His Sire's dam produced 11365 lbs of milk and 511 lbs butter fat as a 4 yr old in 12 mos R. O. P. Test.

No. 2 is 18 mos old. Prize Winner at Exhibition. His Dam now in R. O P. Test has produced in first two months of Test 2802 lbs milk and 121.4 lbs butter fat. His Sire is from Dam of above Bull.

No. 3 is 3 mos. old. His Dam is same as No. 2

No. 4 is 7 mos. old. His Dam qualified in R. O. P. Test with High Records. These Bulls are all in Excellent Condition.

ARTHUR S. DENNIS,
"Willow Farm,"
Stewiacke, Col. Co., N.S.

S. C. White Leghorns

Winners at Amherst, Halifax and Sydney. Eggs for hatching, utility $100 Exhibition $2.00 per 15. [Special pens prices on application.)

CHAS. JOHNSTON
Springfield Farm
Box 227 North Sydney N. S.

Advertise in Th Maritime Farmer and get Results.

A BARGAIN.

Four turkey eggs, (Bronze) six Buttercups and five Single Comb Rhode Island Red eggs $2.00 Rhode Island Reds, Buttercups, $1.50 sitting 15 eggs. Best Buttercups eggs, birds good enough to exhibit, $2.00. Grey African Geese eggs 50c each. Blue Orpingtons from the best English stock, I have one pullet in my flock from Crystle Palace, England, winner, and other birds from Boston and New York winners $5.00 for 15. Bronze turkey eggs $3.00 a dozen.

SARAH E. MOSES SMITH, - Woodward's Cove, N. B.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

Q. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

Elmhurst Stock Farm!

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys!

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Great Dispersion Sale of 75 Head of Imported and Canadian Bred Ayrshire Cattle.

The celebrated Glenhurst herd, the property of James Benning Williamstown, Ont. Wednesday April 19th., 1916 World's Fair Champions were bred in this herd, included are six females of the famous Floss Strain. This herd was founded 55 years ago, and is headed by "Glenhurst Torrs Mayor" 43480 year Champions at Regina 1914 sire "Lessnessock Coweb" (Imp) 30586 Dane, Torrs Cony 3rd 30597.

Mature Cows milking 60 lbs per day. four year olds milking 50 to 55 lbs per day, two year olds making records of 8500 lbs, Cows milking 1500 to 1900 lbs per month testing 4.02% to 4.067 butter fat, Cows large size, large teats and good testers and good milkers.

Vehicles will meet trains from East and West the morning of the sale. Write for Catalogues Sale will commence at 1 P. M.

JAMES BENNING, - Williamston, Ont.
A. PHILPS, M.L.A., Auctioneer

Butter Parchment at Farmer Office, Sussex

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell View Farm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires!

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Small Fruit Plants

STRAWBERRIES: Senator Dunlap, Warfield, Pokomoke, Glen Mary, Three W's, Parson's Beauty, Sample, etc.

RASPBERRIES — Herbert, King, Cuthbert, Hiram, etc.

EGGS FOR HATCHING

Barred Plymouth Rock, White Wyandotte and White Leghorn.

SEND FOR PRICE LIST.

ORCHARD HILL FARM
Brown's Flats, N.B.

BARRED PLYMOUTH ROCKS

What's the use of paying big prices for Eggs for hatching when you can get the BEST LAYING STRAIN of Barred Rock Eggs, for $1.00 per setting. Parks Rocks have been bred for Egg production for over 25 years. A few Hens, Pullets and Cockerels for sale.

J. H. PRICHARD, - - SUMMERSIDE, P. E. I.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle—Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine—3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices.

Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - Clifton, N. S.

HIGH-RECORD HOLSTEINS

Having bought a farm at this address and removed my Holstein herd from Rockview Farm, "Welsford", I am prepared to supply a few choice young Bulls. I have also a few choice Yorkshire pigs, both sexes, about four months old.

WM. S. HARDING, - Hammond RIVER, N. B.

COBEQUID FRM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

Poultrymen Attention!

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.
Send for free Catalogue and give us a trial order

FARMS FOR SALE

Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

Genuine Clearing Sale of

Standard Bred Poultry

Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

FOR SALE

5 trios S. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5.00 per trio. 2 trios R. C. R. I. Reds, 1 Cockerel and 2 Pullets, at $5 00 per trio. Also 1 pure bred Shorthorn Bull Calf, 5 months old.

Write for particulars to

W. H. Henry, - Shubenacadie, N. S.

WYANDOTTES
GOLDEN AND SILVER

Splendid exhibition [illegible]—a large number—in both varieties for sale at right prices. Send for one or more of the kind that can win at [illegible]

EVANS KYLE
Magnolia Avenue Poultry Yards
SUSSEX, N.B.

Dispersion Sale
March 15th

Owing to the Managing Director of this farm having gone to the front, it is found necessary to reduce our large stock.

On March 15th we will sell at Private Sale or Auction a number of Fine Holsteins and Ayrshires, all ages, male aud female.

Send for catalogue.

ROBERT KIDNEY, Manager.

CLOVER NOOK STOCK FARM,
Hartland. N. B.

ONE CENT A WORD

FOR SALE—Pure Bred White Wyondotte Eggs for hatching. $1.00 per 15 F.O.B. train or boat—GEORGE SMITH, Youngs Cove, N B

FOR SALE—Pure bred Buff Orpington and White Plymouth Rock Eggs, $1.25 per 15.—ELWIN U. HARRISON, Maccan Station, N. S.

FOR SALE—A pure bred Clydesdale Stallion, rising two years, from best of imported stock. Apply to FRED E. SHARP, R. R. No. 1, Norton, N. B.

WANTED—Two Tamworth Sow Pigs, one Berkshire Boar, from four to six weeks old, also one Ayrshire Bull Calf, dam must be qualified in the R. O. P. test. This stock must be registered, also please state price of same when answering.—JAMES ROGERS, West Bathurst, N. B.

TURNIP SEED FOR SALE.—The Nova Scotia Agricultural College has two vatieties of turnip seed for sale—Corning's Lapland and Sutton's Champion—price 50c per pound, in quantities under 10 pounds, 40c per pound for orders over 10 pounds: Address NOVA SCOTIA AGRICULTURAL COLLEGE, Truro, N. S.

"ORCHARD HILL WHITE WYANDOTTES"—Martin's Regal, Beulah and Norfolk strains, some of the leading winning and laying strains in Canada. Selected females mated to "first prize utility cockerel" of Maritime Winter Fair, Amherst, 1915. Eggs $2.00 per 15; good utility matings, $1.25.—DEWITT SMITH, Amherst, R. R. 4, N. S.

WANTED—PERSONS TO GROW MUSHROOMS for us at their own homes. From $15, per week upwards can be made by using small waste space in cellars, sheds, yards or gardens. We furnish full instructions. Illustrated booklet sent free on request. Address MONTREAL SUPPLY CO. Montreal Can.

160 Acres, $2800

Stock and Tools Included

Near neighbors, daily mail, telephone, on cream route, ½ mile to school; 55 acres machine worked fields; 100 apple trees; 25-cow spring pasture; owner wishes to accept a business offer and make low price for all $2800; if taken at once he will throw in 5 cows, pair horses, mowing machine, horse rake, potato planter and digger, disk harrow, riding cultivator, wagons, etc., etc.; you should pay for this farm with two years' potato crop; you will understand what a bargain this is when you see the picture of the splendid 10-room house and 50-ft. barn with big silo; stable; ice and poultry houses on page 9, our new catalogue "Money-Making Farms", just out, it is filled with farm bargains everywhere; copy free.—E A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass.

EGGS FOR HATCHING

From two pens of Pure Bred White Wyendottes. Selected Birds. Pens headed by males imported direct from John S. Martin, Pert Dover and Mcleod Bros, Stony Creek, Ont, the latter bird guaranteed by them to be bred from a hen who in her pullet year laid 249 eggs. Price $1.00 per 15. Also from one pen of Single Comb Rhode Island Reds, good laying strain, good color. Price $1 per 15.

Hattie E. Crowe, Lower Truro, N.S.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

N. B. Potato Growers Convention

(Continued from Page 439.)

executive duties as regularly come within the office in similar organizations.

Clause 2.—In the absence of the President, the Vice-President shall perform the duties of the President.

Clause 3.—It shall be the duty of the Secretary to attend all meetings of the Association, the Executive Committee and the Advisory Board and keep a record of the same. He shall keep all records of the Associatio., shall arrange for and conduct the annual Convention and exhibit, in co-operation with the Executive Committee. He shall, in co-operation with the respective Assistant Secretaries of the Sub-Societies, arrange for and conduct and Annual Convention and exhibits of all Sub-Societies. He shall arrange such other meetings and Conventions as shall be necessary to promote the work and aims of the Association. He shall collect all dues and other monies belonging to the Association, keep an accurate account of the same and pay them into the hands of the Treasurer. He shall arrange co-operative field tests, receive and compile reports on the same and publish and distribute such reports and literature as may promote the interests of the Association.

Clause 4.—It shall be the duty of the Treasurer ta receive from the Secretary all monies paid into the Association, to keep an accurate account of the same and when necessary, pay them out on an order from the Secretary, signed by the President.

Clause 5.—It shall be the duty of the Executive Committee to fill all vacancies occurring during the current year and to arrange for exhibits at the Canadian National Annual Exposition and such other Expositions as it may decide upon. The Executive Committee shall also define the territory allotted to Sub-Societies.

Article II. Obligations of Members.

Clause 1.—Every member, except honorary members, shall pay into the Association, annual dues of one dollar (1.00) on or before April 1st of each year.

Clause 2.—Every member of the Association receiving material for co-operative experimental work, shall compile and submit a report on the experiment, on or before November 1st of each year.

Article III. Termination of Membership.

Persistent failure to comply witl the requiremeats of Article II. of the Bye-Laws shall be considered sufficient reason for the termination of membership, if endorsed by a majority vote.

Article IV. Voting.

Members unable to be present in person, may vote on any question by letter.

STOCK NOTES.

On another page of this issue will be found an advertisement announcing the dispersion sale of Mr. James Benning's pure bred herd of Ayrshire cattle at Glenhurst Farm, two miles from Summerstown Station, G.T.R., fifty miles west of Montreal. Trains from the East arrive at Summerstown at 11.48 a.m. and 6.33 p.m. Teams will meet trains from each way day of sale and ample accommodation will be provided for those wishing to see stock before day of sale. The sale begins at One p.m. sharp on Wednesday, April 19th. Trains leave for the East at 7.59 a.m. and 5.04 p.m.

This herd was founded 55 years ago by the late David Benning by his own importations from Scotland. Mr. Benning was a good judge of Ayrshire cattle and took a great interest in their development.

There has never been a case of tuberculosis in the herd. Four-year-olds have made over 11,000 lbs. of milk, and two-year-olds 9,000 lbs. milk in one year.

Animals from this herd have gone to all parts of the United States, Canada and Japan, making records wherever they went. The Chicago World's Fair champions, male and female, were bred in this herd.

Parties unable to attend the sale may have their commissions attended to free of charge by the auctioneer, A. Philips, M.L.A., Huntingdon, Que., or the proprietor, Mr. James Benning. Send for catalogue if interested, then send your commissions, or better still attend the sale in person.

GUERNSEY RECORDS.

D. G. McKay and Son, Spruce Grove Farm, Scotsburn, N.S., writes:

We have sold all the stock which we had advertised in the Maritime Farmer. We sold six head all togethe and have nothing for sale now except some bull calves

The following records of performance were recently made at Spruce Grove Farm.

In the aged cow class Flora's Heiress, No. 83, 8,358 lbs milk, 430 lbs. fat, 501 lbs. butter.

Lady Pauline II., of Spruce Grove, No. 321, 8264 lbs. milk, 483 lbs. fat, 563 lbs. butter.

Four-year-old Class.

Hieress Daisy, No. 318, 8182 lbs. milk, (64 lbs. fat, 424 lbs. butter.

Two-year-old Class.

Hieress Rosy, No. 612, 6696 milk, 339 lbs. fat, 395 lbs. butter.

Charlotte, of Spruce Grove, No. 891, 6287 lbs. milk, 353 lbs. fat, 411 lbs. butter.

Jennie, of Spruce Grove, No. 889, 7607 lbs. milk, 394 lbs. fat, 459 lbs. butter.

We recently purchased at Hugh A. Dickson's sale the highest priced cow in the sale, "Queen Bess of Dixieland." This cow stood first at Halifax and Fredericton in the three-year-old class last fall.

Her official record in the two-year-old class for ten months is 6969 lbs. milk, fat 396 lbs, 462 lbs. butter.

Get a Power Sprayer Now

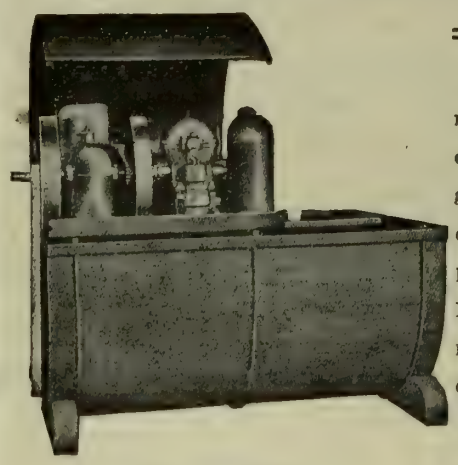
Each machine guaranteed for 2 years against REPAIR.

Each machine will handle 2 lines of hose at 250 lbs. pressure, deliver 6½ gals. mixture a minute and easily apply from 1200 to 1500 gals. a day.

Engine can be instantly released for other POWER PURPOSES, such as sawing wood, etc.

Engine parts interchangeable with "Ford" motor parts. Therefore engine is standard.

I. X. L. JUNIOR Automatic Power Sprayer



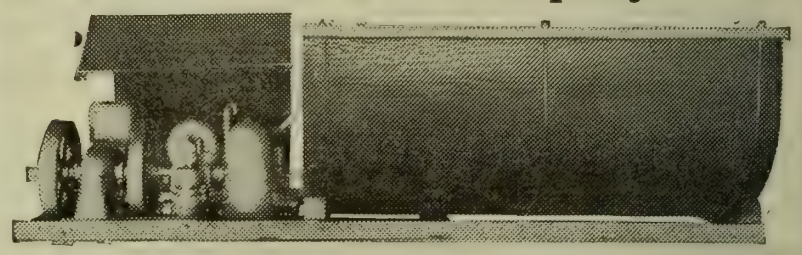
The I. X. L. Junior is made in two styles. It consists of a 3½ H.P. Engine, cypress tank, gear driven vertical cylinder pump, two 25 ft. leads of Hose, two visible spray nozzles, complete in all details.

Weight, 450 lbs.

I. X. L. with 100 gallon tank, $165.00
I. X. L. with 150 gallon tank, 170.00
I. X. L. with 200 gallon tank, 180.00

For rough or hilly orchards, common in some parts, the machine which best fills the requirements is our back-mounted.

Pontiac Special
Automatic Power Sprayer



This machine is equipped with the same engine as the I.X.L., and is made with two size tanks.

150 Gallon Tank, 50 ft. Hose, 2 poles $200.00
200 Gallon Tank, 50 ft. Hose, 2 poles $210.00

We have prepared a valuable booklet entitled, "Prize Fruit and Vegetables from your Orchard and Garden," which is free to all farmers, fruit and vegetable growers. Use the coupon and send for your copy to-day.

CanadianSprayer Co.
TRENTON, ONTARIO

Canadian Sprayer Co., Trenton, Ont.
Dear Sirs:
Kindly send me your free book.
Name .....
P. O .....
Number of trees in orchard .....

Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, APRIL 18, 1916. Number 14.

THE HOME VEGETABLE GARDEN

By Prof. W. S. Blair, Kentville, N. S.

An effort should be made by every man who has a plot of ground to grow the garden produce required for the home. It is profitable to do it, and it adds greatly to the interest of the home life. More garden produce means less outlay for running the house, economy should be a first consideration. The more we produce in our own lands, the more surplus will there be left for export to feed the millions of people depending upon our exports for the successful termination of the war. It seems right, therefore, that every one should consider seriously the matter of growing everything they can to meet their own wants, even should extra effort be necessary. With this in view an effort will be made to deal briefly but fairly specifically with certain garden crops from time to time as to their cultural requiremens.

ONIONS.

Onions are used extensively throughout our country and in our towns, yet these are largely imported. It is not difficult to grow onions if right methods are followed. It is practically impossible to grow onions and mature them from sowing the seed in the open ground. The season is not long enough to mature them before the cool damp weather approaches, and they consequently keep on growing without maturing properly, hence will not keep.

For success start the seed now, the earlier the better. Secure a box 3 inches deep fill it with good garden soil. If such soil is not available pick it up in the garden and place it near a stove where it will soon dry out and be ready for seeding in a few days. Make the soil even in the flat and scatter the seeds rather thickly, about 15 seeds to the square inch and cover with about 1-4 inch soil. Keep the soil moist, not wet, and warm, not hot, and in a short time the seedlings will appear when the box is set in the brightest widow in the kitchen. A very litte effort will make a support for the box. Do not force the plants by keeping the box too warm, and do not keep the soil too wet. Onions do not require too much heat to grow sturdy, but give all the sunlight possible. Sunlight is what makes strong plants, and during the bright warm days set the flat in a protected place outside, or they may be set in the hotbed or cold frame. This flat of onion plants will plant out a good area. I have set 1000 plants from a square foot of soil. These spaced 4 inches apart will give over 300 feet of a row, and this row when matured from good plants started two months before planting out time should produce 4 bushels of well matured onions at 5 cents per pound wotrh $12.00.

Onions are easily transplanted. They should be transplanted as early in May as the ground can be worked nicely. The bigger and stockier the plants the better will they do. Harden off the plants well by leaving them out a week before transplanting. Late set and small plants will give results little if any better than to sow the seed in the open ground, hence, the importance of starting the seed early. The better the soil used in the flat the quicker the growth, but do not force growth by a high temperature. A rich soil and low temperature will give the best plants.

Any good garden soil will grow onions to mature early in September. Soils containing quickly available plant food is necessary. If manure is to be used have it will rotted if possible. Suitable soil can be arranged for when the time comes, but to have the plants it is necessary to get busy now. The Yellow Globe Danvers, and Priztaker are two excellent varieties.

To illustrate the importance of making an early start the results from our plots seeded in flats February 28th show an average of 10.3 oz per bulb and those planted March 17th 7.1 oz. It cost little more to transplant the onion than it does to plant and thin onions from seed sown in the open The plants require but one transplanting, that from the seed flat to the open ground.

CELERY.

Celery seed should be started now. Use a flat or shallow box with 2 to 2 1-2 inches of soil. The seed takes from about 10 days to germinate, during which time the box can be set any place that is moderately warm. Keep the soil damp but not wet. When the seedlings appear place in a bright window. A small box 6 inches square will give all the plants required. The White Plume and Paris Golden are the two best varieties. In about six weeks time the small plants can be transpalted to other flats, spacing the plants 1 to 2 inches apart.

Strong vigorous plants are necessary and these can be got by early seeding. Any rich garden soil will grow good celery if good plants are secured for starting.

The celery seed should be just covered with soil and use every care in watering not to soak the soil too much.

PANSY.

Now is the time to put in a little box of pansy seed. They can be handled the same as onions. Stick to the shallow flat and a bright window. Late planting will not give early blooming plants, hence, the importance of starting this lovely plant now. Just nicely cover the seed about 1-16 inch of soil will do for covering.

HOTBEDS.

In order to have vegetables covering as long a period as possible it is necessary to have a hotbed. Some plants cannot be brought to maturity without the hotbed to start the seeds in and develop the plants for setting out. The expense connected with the hotbed is not great. The size of frame required is one large enough to carry four sashes each 3 feet wide and 6 feet long. Two inch plank is usually used. The back of the frame is 15 to 18 inches high and the front 10 to 12 inches. The planks are spiked to the end pieces which are 4 inches under the 6 feet, and three 2 by 2 cross pieces are put level with the top of the frame to carry the edge of the centre sashes. Boards can be used for the frame but the planks are much more satisfactory and durable.

The sashes are usually made up of 3 rows of 10 by 12 glass which are lapped so that the water will run off, 16 lights are required for each sash. The sashes usually cost about $2.25 each complete The unglazed sashes cost usually $1.25 each. Any window sash can be used and a frame any size to fit the sash can be made. Outside window sashes are often used, and if properly kept painted and laid away after they are not wanted it does not injure them appreciably. After a rain they should be lifted to let the water run off so that the putty will not be loosened.

The hotbed should be located on the south side of a building, or protection of some sort is advisable.

The manure used is placed on the surface of the ground. Horse manure is the best to use as it gives a uniform and lasting heat. The bed is made at least one foot larger on each edge than the frame. The frame is set on this when it is finished. If the pile is made too narrow and the edges not well [illegible] the frame will settle at the edges and the inside become rounded, hence the importance of using care in getting the edges well put up. The manure is scattered evenly in layers building the whole pile up so that it will settle evenly. If the manure is dry it should be tramped and possibly some water to dampen it may be advisable. If it is damp very little tramping, except that caused by the forking over the manure, will be necessary. Manure that has been "fire-fanged" is not of any value, and when saving up the manure care should be taken to see that it does not become "burnt-out." If the bed is started early 2 1-2 feet, which will ultimately settle to 18 inches, should be used. Two feet of good manure makes a good bed after the early part of April.

After the manure is placed the frame and sashes are put on the bed and it is allowed to remain for a week giving a little ventilation to allow rank gases to escape. An inch or two of soil, cinders, ashes, or sand is then placed on the manure to level it up if flats are to be used, or if soil is to be used this can be put on to a depth of 5 inches. The bed then should be in good condition for starting seeds.

Any good garden soil is suitable for starting seed in. It is not advisable to have the soil excessively rich as this forces growth too rapidly. A light loamy soil is advisable.

Much care is necessary in order to give proper ventiliation. If the weather was in any degree constant specific directions could be given, but owing to varying sunshine, wind and outside temperature conditions this is impossible. Keep in mind that the space between the glass and the plants is very small, and that a bright sun will run up the temperature very rapidly, and in fact burn the plants in a short time if left without a slight ventilation, on the other hand too much ventilation may chill the plants in a short time. It does not take long to form judgment in the management of the frame if one but gives a little thought to it. A temperature of the soil ranging about 60 degrees may be considered about right, but considerable variation either way may not cause injury. It is better to run the bed fairly low, as the plants are much more stocky. If the plants are forced by high temperature they become weak and spindling.

The watering requires care. The soil should not be soaked particularly during dark cold days when it is impossible to ventilate very much. The watering should be done about noon so that the plants and bed can dry off before being closed for the night. It is not good to use ice cold water on small seedlings as this chills the plants.

If a very cold spell approaches it is wise to protect the plants by putting bags or rugs over the glass. This is particularly desirable if the manure has not been heating well or if much heating material has not been used. Usually the heat of the sun is sufficient for the day time, but for night the heat from the fermenting manure is depended upon. Old heavy bags sewed together form a splendid cover and the cover should be made large enough to come down over the edge to shut off th air from the edge of the sash. A little attention to this will give a more even temperature in the bed during the night and possibly prevent freezing during a very cold night.

The hotbed can be made any time now; in fact it is well to get busy at once as we are not far from the first of April when seeds of some plants should be started, and the bed should be made a week before any seeding is done.

If women could make hotbeds nearly every farmhouse would have one, but it is a man's job. The women can look after the details connected with the management of the hotbed better

(Continued on Page 453.)

Varieties of Potatoes Suitable to N. B.

By W. W. Hubbard, Supt. Dominion Experimental Station, Fredericton

There are doubtless growers here who could tell the Association more about th results obtained from certain varieties than I can, so far as yield and sale results are concerned, and as there is time for discussion after I have concluded my few remarks in openeing this subject, I hope that those who can do so will offer their evidence.

I do not pretend to any specially important knowledge on this subject, as my experience of competitive tests of varieties extends only over three years, and these tests have not been carried to their conclusion in the market or on the table.

So far as varieties suitable to this province are concerned I really cannot say that any well recognized variety is unsuitable, for we undoubtedly have a soil and climate unexcelled in securing both yield and quality with practically all varieties.

However, there are other things besides yield and actual quality which make one potato more profitable than another, and one of the most important is attractive appearance. This means, speaking generally, a smooth symmetrical shape, eyes as shallow as possible and an even decided color. Another important detail is that the tuber shall be of a shape which will enable it to cook quickly and evenly and that it shall be solid throughout—not hollow hearted, and last but not least in point of profit, that the tubers shall be similar in shape with an even habit of growth.

Professor Blair, who will speak this afternoon on seed selection will probably tell us of experience obtained in regard to securing and maintaining these desirable characteristics, and I will therefore say nothing on this point.

I would, however, throw out the warning that it may not yet be definitely proved that the stamina of a variety can b eindefinitely kept up by planting the tubers, that is, that it may be a possibility that we must return to the planting of the true seeds of the potato plant to be sure of maintaining the vigor of our plants.

Our experience thus far on the Experimental Farm would seem in some measure to corroborate this claim, for the ten rows of seedlings grown in 1915, four years from the seed of the potato balls, certainly contained the most vigorous and disease resistant plants in our whole field. In 1915 we planted 300 hills of tubers that had been grown from seeds in 1912 by Dr. Seth Whitney, of St. Stephen. These tubers were little rough tubers of various shapes with deep eyes, some black, some white, some various combinations of black and white, but none red or pink. In the fall these hills were all dug separately and each put in a bag, the tubers being larger and better shaped than the tuber planted. In 1914 thirty hills were selected and six hills were planted from the best tubers of these thirty selected hills. These were also kept separate when dug, and the tubers again were larger and generally more shapely than the tubers planted. In the spring of 1915 these lots were gone over carefully, the ten best lots were selected and 100 hills of each planted—eight white strains and two dark. These yielded:

No. 1 Black, 76 bbls. per acre.
No. 2 White, 99 bbls. per acre.
No. 3 Black, 88 bbls. per acre.
No. 4 White, 99 bbls. per acre.
No. 5 White, 105 bbls per acre.
No. 6 White, 106 bbls. per acre.
No. 7 White, 96 bbls. per acre.
No. 8 White, 109 bbls. per acre.
No. 9 White, 99 bbls. per acre.

Ever since we began growing these seedlings, the tops have been an especially dark green, the plants strong and vigorous in every way and very free from any disease of either leaf, stalk or tuber. Our experience, therefore, as above stated, seems to corroborate the theory of the men who claim that potatoes should be rejuvenated by breeding over from the seed balls.

As to a choice between varieties, it seems to me to be rather a choice of type than variety.

For our present market demands, a white skinned, smooth and short oblong tuber such as the Green Mountain seems to be the type preferred. A round potato like the Cobbler also goes well. There is one difficulty about these shapes that meet the cook and that is, that when the potato grows large it is too thick through to cook quickly and evenly, and in the case of the Cobbler is very apt to be hollow hearted. Therefore, to have a thoroughly satisfactory market potato of these short types, it is essential that they be not overgrown.

With this proviso, I think experience shows us that Green Mountains and Irish Cobblers are two outstanding varieties for first choice.

Of these varieties, we have had the following yield on our test plots:—

	Av. 2 years bbls. per acre.	Av. 3 years bbls. per acre.
Green Mountain — Ottawa strain	116	104
Green Mountain — P. E. Island	130	108
Green Mountain — —N. B. strain	147	136
Average of 3 strains	131	116
Irish Cobbler — Nova Scotia strain	144	
Irish Cobbler — —Ottawa strain	152	
Irish Cobbler — —Saskatchewan strain	163	
Irish Cobbler — P. E. Island strain	145	
Average of 4 strains	151	

Our system is to plant 12 in. apart in the row, with the rows 30 in. apart. We had no over-grown tubers, and their quality was very satisfactory.

These two varieties belong to different types, and I will just briefly compare some of our other varieties of these respective types. Take first the Green Mountain type and we have of these:

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	Yield, 1915, bbls. per acre.
Delaware	129		123
Carman No. 1		127	
Empire State (Av. of 4 strains)	123	109	92
Clyde	155	135	95
Gold Coin	126	107	72
Green Mountain Jr.	106	94	69
Norcross	93	89	79
Snow	122		
Cumming's Pride			93

A division might be made to take the Carman and Gold Coin, for in my judgment they should be a flatter and smoother finished potato than the other varieties mentioned. And to my mind, the Empire State belongs as much to the Burbank type as the Green Mountain.

The Cobbler Type.

While there are a number of American grown varieties of this type, there is only one we have tested at the Fredericton farm. It is the Eureka Extra Early, and we have found it a high yielding and desirable potato. The average yield for two years was 158 bbls. per acre, and for three years 130 bbls., showing a higher yield than two of the Cobbler strains. Some authorities claim it is the same potato as the Cobbler. An American variety, known as Dreers' Early Standard is also almost indistinguishable from the Cobbler.

The Triumph Type.

The shape of the tuber is much the same as the Cobbler, but the color red, or solid red. The Noroton Beauty, Quick Lunch and White Triumph are all varieties with these characteristics, but the variety we know most generally in New Brunswick is Bliss Triumph or Red Bliss. It is a solid red, vigorous potato, and at Fredericton has given us the following yields:

1914, 152 bbls. per acre.
1915, 140 bbls. per acre.

This potato is in good demand most years for seed for the Southern States, as with the Garnet Chili it is among the most popular early potatoes on the New York market.

The Scotch and English Type

There have been in the last ten years, some very excellent varieties brought to New Brunswick from Scotland and England. The varieties which we have tried out at the Experimental Station are practically all of one type and are mostly good yielders of excellent quality. Among them are the following:

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	1915 bbls. per acre.
Dalmeny Beauty (Av. of 2 strains	127	110	76
Dalmeny Beauty, Dalmeny Hero, Ot'wa	139	123	90
Dalmeny Regent Ottawa	119	119	118
Factor (Av. 3 strains)	96	91	79
Table Talk (Av. 4 strains)	142	127	98
The Moreton	128	117	123
Up to Date	103	99	89
Scottish Triumph	117	106	86

These potatoes are all white skinned and very similar in shape, somewhat oblong, rather flat, the seed end somewhat like the small end of an egg and smooth with yellow eyes. From their shape, they are probably better cooking potatoes than the Green Mountain type.

The Burbank Type.

These are an oblong cylindrical white potato of good quality. The varieties which have been tried out at the Experimental Station are:

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	1915. bbls. per acre.
Burbanks Seedling	141	106	93
Money Maker (Av. 2 strains)	127	119	104
White Chief	129	118	97
Vick's (Av. 3 starins)	133		
Vicks' (1 strain)	147	134	107

Vicks', planted in a seed plot in 1914, gave 338 bbls. per acre. by far the best crop of potatoes I ever saw. Unfortunately the seed plot from the seed of this crop was flooded out in 1915 and no results were obtained. On a small portion where the plants were damaged, but not killed, the yield was at the rate of 127 bbls. per acre.

The Rose Type.

This type was popular years ago, but to-day the pink potatoes are not sought on the market, and perhaps the general quality of potato of this type is a good reason for their decline in popularity.

The Early Rose was long the reigning favorite of these potatoes, but it has been dropped almost completely. The following are the varieties tested at the Experimental Station:

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	1915. bbls. per acre.
Early Rose	91	76	75
Early Norther	128	122	109
Rochester Rose	126	108	73
Everett	96	86	92
New Scotch Rose	102		99
Houlton Rose (said to be simply an early strain of Early Rose)	170	143	93

The Hebron Type.

These potatoes apparently differ only from the Rose type in their color. Sometimes their quality seems to be better, but they have no popularity on our markets. The varieties tested were:

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	1915. bbls. per acre.
Early Beauty of Hebron	153	136	100
Early Bovee	116		
New Queen	96	92	85
Queen of the Hebron	43		

White Elephant, not now grown, but an old heavy yielding variety usually of better quality than the others mentioned. This variety might go perhaps, with some reasons in favor of it, with the Burbank type.

The Peerless or Rural Group.

	Av. 2 year bbls. per acre.	Av. 3 years bbls. per acre.	1915. bbls. per acre.
Carman No. 3	146	125	83
Peerless			
Rural New Yorker	125	112	87
Sir Walter Raleigh	137	121	89
Prolific			

The Peerless and Prolific are old varieties that were grown in the lower St. John River Counties consider-

(Continued on Page 470.)

Potato Improvement and Seed Selection

This subject opens up a very broad and many sided question. I do not propose to deal with the question of improvement fo the potato through the development of new varieties. I fancy the object at the present time is to set forth methods whereby we may hope to keep the varieties we now grow up to their fall vigour. I think there is sufficient evidence entirely trustworthy to convince us that there is no decline in a variety due to old age. Without a doubt a variety will deteriorate under certain climatic or soil conditions, or owing to a disease which prevents normal development, but because such is the case is not evidence that the variety has "run out," it only proves that the variety has been surrounded by conditions unsuitable for it to retain its former vigour. The question therefore is not so much the introduction of new varieties—although the introduction of disease resistant varieties is important—as it is the keeping of present good varieties up to a certain standard of excellency particularly as to vigour.

Some of our growers of the Garnet Chili potato say that this variety has "run out" and they wish they could get a variety that would yield like the old Garnet Chili. On talking to other growers I found that they considered the present Garnet Chili equal to the first introduced stock of this variety. This variety, owing to the fact that true seed could be secured from different growers—which is not the case with many of our white varieties—offered a good opporunity for some experimental work to find out whether there was a difference in the stock grown by different men. We were also interested in the work because the Garnet Chili shipped from Nova Scotia to Bermuda had in some cases given very inferior yields, and we wished, if possible, to find out the cause.

This variety was secured from eight different growers and planted in rows alongside each other under exactly similar conditions. The results at harvest time were as indicated in the table below.

Garnet Chili Potatoes From Different Growers.

Number of grower	Marketable bushels	Unmarketable bushels.	Total bushels.
1	220	20	240
2	94	26	120
3	212	14	226
4	186	20	206
5	26	10	36
6	32	14	46
7	176	34	210
8	52	22	74

You will see that the lowest yield was 36 bushels per acre and the row adjoining yielded 206 bushels. It seems reasonable for the man who was growing Chili potatoes from seed lot No. 5 to think this variety had "run out," and also for the man who was planting No. 1 to consider the variety was as vigorous as ever. Seed from these plots will be again planted to see whether they can be brought up to a uniform yield.

Now the question is what has brought this change in these various seed lots. There is no doubt but that seed selection has played an important part, but it can be truthfully said that no hill selection had been practiced, and if it is the case that hill selection only is of value we will have to consider that selection has not been a factor in bringing about the results here shown. In the case of grower No. 3 I know he has been careful to plant only uniformly good, medium size, tubers of this variety, and he has always taken his seed stock from the best dug areas.

At planting time when placed together there was a noticeable difference in the different lots, but they would all be considered good seed stock. The difference here shown would not, I think, have been so marked had the soil in which they were grown been free from the disease called Rhizoctonia, commonly known as "Rosette" or "Little Potato. The soil at the Kentville Station even on the newly broken areas apparently has this disease in it. Our soil is decidedly acid, a condition suitable for holding potato scab in check, but one decidedly favorable for Rhizoctonia Sandy acid soils are apparently most suitable for the development of this disease and there is no doubt that the disease is more prevalent in some soils than others.

The growth started on plots 5 and 8 and in many cases the sprouts were not able to get above the ground before being killed by the fungus. An examination of the tubers revealed the fungus destroying the sprouts soon after they started, and below this diseased area new sprouts would start which would meet a similar fate. In many cases the sprouts would succeed in reaching the surface before being attacked as indicated by discolored areas along the stem below the surface of the ground which would ultimately kill the stalk or materially reduce the power of the plant to function properly. I have here several specimens of this disease in the various stages as produced in our greenhouse which you can examine. These specimens I think clearly indicate the condition that existed on the poor plots. The strong growing plots such as No. 1 and 3 were very free from injury, and this seemed to be due to the power of the growing sprout to resist the disease because of having the vitality to force the growth so rapidly that the fungus could not break down the tissue. The buds were strong, grew rapidly, and where the stems were injured they seemed to outgrow the injury somewhat unless it happened that the stalks were entirely girdled. Had those potatoes been planted on a soil entirely free from this disease. and had the seed been treated to kill any of the disease carrying bodies on the tubers, I am sure that the results would have been much more uniform, but under the conditions that existed, and conditions that are liable to obtain on 50 per cent of our farms, the only hope for success apparently is seed stock of high vitality.

Now you ask what has brought about this low vitality to start with? Suppose for instance that the plot yielding 240 bushels per ace had been grown for years on soil practically free from this disease is it not reasonable to suppose its vitality would be stronger than that from the field which year after year had been subjected to even a moderate attack of this disease. This disease certainly hinders normal development, hence a weakened plant must result. If. therefore, such a disease gardually weakens a plant it is reasonable to suppose that a dorught, intense heat or excessive moisture will bring about similar results. It seems to me we are bound to have a fluctuating variation in the vitality of tubers owing to environmental conditions, and any condition which is likely to give most normal development from the time the set is planted to the maturity of the crop will give us the strongest vitality. On the other hand my observation leads me to believe that a check during the early life of the plant--about the

(Continued on Page 470.)

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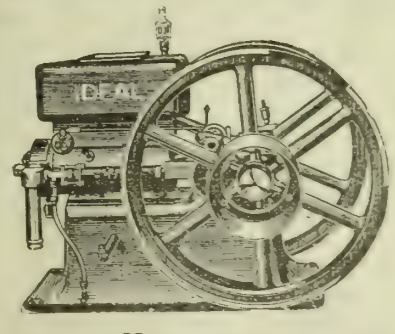

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APRIL 18, 1916.

DATES OF ISSUE.

May 2-16
June 6-20

HAVE AN OUTSIDE INTEREST

Speaking at the Sixth Annual Dinner of The Harvester Club on February 3rd of this year, Dr. Henry B. Favill, who was guest of honr on that occasion, said in part:

"The thing which becomes an interest to us is the thing into which we put our intelligence. The fact is, gentlemen, that circumstances never have any intrinsic, pleasurable quality of circumstances is dervied from what we put into them, not from what we take out of them. There is no question about it. So I am urging upon you as a general proposition to have interests really definite, consistent interests, that you may reasonably and honestly call intellectual interests, in some subject or other outside your business.

"The other day in talking to a friend about various public activities in which we had been engaged together, he said, with some feeling of discouragement: "There is nothing difficult about this matter if you can get the ear of honest men." He was referring to municipal affairs, to a number of situations that are important. To that I would like especially to call your attention.

"The obligation that rests upon all men who are in dignified employment, men of respectable connections, of elevated business ethics, is to take part in their community life. Do you do it? Some of you, I know, do it tremendously. Many of you, would if you just knew how. I venture to say, however, that in the minds of this splendid body of men here tonight there is not the conviction regarding this ethical relation to community affairs that there should be. Think that over. Let me say with all the emphasis I can that every unit of good that you can confer on the community by participating in its affairs will be returned to you in personal reward tenfold through the interest that will come to you from an intelligent understanding of the needs of your community.

"We live in a wonderful country, under a wonderful government, complex, ramified, intangible and rather loosely knit. None of us knows definitely much about affairs outside his business—particularly the social and political affairs around him. In the light of the turmoil which now exists in the world; with the internal trepidation everyone of us feels as to what is next; with the serious thought that a large percentage of the men here tonight may never meet again if things should go from bad to worse during the next two or three year—with this in mind I ask you, gentlemen, earnestly to answer to yourselves the question: "What are you doing toward the stabilizing of your government—not your national government only but your state and municipal government?" Your answer may be: "What can I do? What influence have I in muncipal affairs?" Let me assure you that the one force which is of the greatest consequence in the United States, the on force that can be mobilized to great advantage, is public opinion, is independent thought, is an intelligent understanding of the issues, be they national or municipal. Therefore, in the name of all the organizations that are reaching out for an honest public opinion, I urge you to realize that every one who interests himself intelligently about his municipal affairs, thereby determining what his ballot shall be, is rendering yeoman service on bhalf of his country.

"Bear in mind, gentlemen, that there are a thousand ways in which you can bring yourselves into this relationship. There are the ways of philanthropy, the ways of civics, the ways of politics, the ways of all kinds of activities. It is not the specific group that you join; the point is to join some group which has for its purpose an intelligent understanding of the problems before us as a people and a determination to do its best, whatever it may be, toward the solution of those problems. Never in the history of this country has it been so imperative that every honest, able-bodied, red-blooded, clear-thinking man should have his mind set on what is the right thing for him, for his community and his country to do. This matter does not necessarily turn upon your expression of opinion. It turns finally upon the clarity of your thought. You can't have a clear thought without an outstretching into the matter that will give you a cerain kind of exact knowledge. You can't have an exact knowledge unless you study—unless your think. You cannot very well study this subject unless somewhere or other you get into such a group as I have mentioned.

"I began by speaking about your individual happiness because I know that anything you can do along this line will redound to your individual happiness, but aside from that, and beyond it, I say to each one here tonight, with all the earnestness that I can bring to bear, and quietly and seriously: your country needs you, needs you more than it ever needed you in its history."

Since the above paragraphs were spoken, Dr. Favill has gone to his reward and his kindly deeds to humanity will long be remembered. What a great epitaph for any one's memory is embodied in the following paragraphs.

* * *

"His stalwart physical frame was dominated by his splendid mind. In every attitude and attribute he gave evidence of power; and it was power fitly used for the good of his fellowmen. Many hours taken from his busy professional life were spent in efforts to correct the shortcomings or worse of government and political conditions. His great force of character, his independence of judgment, courage of conviction; his noble disinterestedness, his tender-hearted sympathy were freely given to his friends and the community. No man was too humble, and none too mightly for his service.

* * *

"Taken in the midst of his career, we cannot feel that his work was done. He was the type of manhood for young men to emulate, and older men could profit by his example.

* * *

"Few men have such outstanding qualities as to be long missed in the busy life of the world; but here was one of such conspicuous value that it seems the gap of his passing can never be filled."

* * *

What an impetus the foregoing should be for all those who are conscientious and whole souled in their efforts for the advancement of community interests.

ONLY A FARMER

Thank God for our farmers, they are His co-operators. In looking over the Senate Debates of March 30th we naturally paused and read a while when we arrived at the section dealing with the "escape of Alien Prisoners from Detention Camp at Amherst. Having heard practically all the rumors current in regard to the event in question we were considerably interested in the report of the inquiry.

The attitude of some of the speakers who took part in the discussion was, to say the least extremely childish and time-wasting.

A straight forward question such as had been asked re the necessity of an investigation of such serious reports as were current re the escape of the alien prisoners at Amherst demanded and merited a straight forwad reply. Instead of the latter was the most absurd technical obstacles introduced and a lot of time and word wasting discussion. What riled us the most, however, was the epitaphs that some of the honorable gentlemen who took part in the discussion applied to each other whenever one wished to represent the other as crude, the epitaph applied was the word "farmer" used in a depreciatory manner.

For the education of the various members of the Senate body who expressed their ignorance in this way we wish to tell them that they are many years behind the time—that people who know now-a-days instead of holding the farmers and their occupation up to ridicule uphold their calling and rightfully so as the most honorable occupation in which any man be employed. Our farmers, however, are not entirely free from blame in their matter when they allow themselves to be represented by men who do not know any better than indulge in a depreciatory ridicule of their noble calling.

After-a-while is a luring road to not-at-all.

* * *

In these times farmers have to look ahead and look alive.

* * *

It pays to advertise if your line is good, and it pays to buy advertised lines, because they are invariably satisfactory. The general public have long been educated to believe that advertised goods are best. Can't you see that you are laboring, not only under a handicap, but under a cloud, if your product is not advertised? Publicity dispils the cloud of suspicion and removes the handicap.

The Home Vegetable Garden.

(Continued from Poge 449.)

than the man, hence the importance of placing it within easy reach of the rear of the house so that it can receive the attention of the women of the house. I want to say, however, that we owe it to our families, to the boy and girl particularly, to start a hotbed. It is a potent factor in the development what makes for good citizenship. Its calue cannot be measured in dollars and cents, and the man who fails to help out in this particular is not living up to his opportunities. The old excuse of not having time does not hold in this case. The truth is it is a lack of interest in one of many things which goes to make life on the farm worth while.

It is not for vegetables alone that we want a hotbed, but there are many annual flowering plants which can be started that will go a long way toward making the home attractive, and not only gives pleasure to the inmates of the home, but they give pleasure to all those who come in touch with that home.

FLATS.

The word flat is used to designate a shallow box. This box may be any size desired but should not be deeper than 3 inches. The flat should not be too large. Twelve by eighteen inches is a good size, and it can when filled with soil be easily handled by a woman. Two and a hald inches depth of soil is sufficient to grow any plants in for setting out. It is best to use 1-2 inch lumber for sides and bottom and 3-4 inch ends. The bottom should not be tight thus giving drainage. Soap boxes, packing cases in fact any such lumber makes excellent flats. It is a good plan to make the flats of one size in order to make the best use of the space in the hotbed.

The advantage of the flat is that seedlings start better in them than in soil in the hotbed. They can be moved from place to place. The bed can be opened a flat taken to the kitchen the plants transplanted to other flats where it is warm and the flats carried to the hotbed again. Less soil is required. As the plants get larger and ready for hardening off they can be left outside or put into a cold frame and the space in the hotbed given to other plants. When transplanting time arrives the plants can be carried to the field and with a knife the soil is cut out in squares and the plant set to the open ground with little check. In fact in every way the flats are desirable and will materially add to the success of the grower. Usually the first interest awakened in the boy and girl in regard to pleasures in farm life centres around the handling of garden plants, and it is well that we see to it that a few plants are well grown rather than that many should be poorly grown. The flat helps in the growing of good plants and the work of putting together a few flats is not very great.

STARTING THE SEED.

The smaller the seed the shallower the depth of planting. The small seed such as celery should be covered about one-eighth inches deep, and cabbage and onions one-quarter inch. Moisture is essential to good fermination and as the germinating seed is confined to the top thin layers of soil it is necessary that this should be kept always moist. It is advisable that a paper be spread over the flat of newly planted seed to keep the soil from drying out rapidly and save so much watering. This covering should be removed as soon as the young plants appear; to neglect this will spoil the plants in a short time. It is a good plan if the sun is very bright to lay laths on the glass spaced one inch apart to give a partial shade yet furnish the desired sunlight.

Every care should be given to the watering of the seedlings for the week following their germination, and at this time do not overwater. The advantage of a partial shade is that less drying out of the flats will take place. The higher the temperature the quicker the germination, however, too high a temperature may force the germination and give weak plants. It is well therefore to give moderate temperature conditions. Poor germination often results from drying out of the suraface soil, hence the importance of giving attention to this detail. Excessive moisture with a low temperature favors rotting of the seed, and the lower the temperature the less the watering required.

The soil should be put into the flat so that it will settle uniform and should be slightly packed particularly around the edges of the flat. The soil may be screened and the rougher rougher parts placed in the bottom and the finer on top. It is not necessary, however, to screen the soil if it is well worked over by hand. If the soil is heavy sand should be added to lighten it some and the covering for the seed is better made up of half sand and half soil. The seed may be scattered broadcast or put in rows and after it is covered press the soil around the seed as this gives better surface moisture conditions.

If the hotbed is kept closed and the air charged with moisture there is a possibility of the damping off fungus getting started. This fungus causes a rotting of the plants at the surface of the ground. Plenty of ventilation is the best way to guard against this trouble. Seedlings particularly are liable to injury and if this is noticed give less water and ventilate more freely.

For the average farm a hotbed of two sashes say 6 by 6 feet will give what plants are required. It is better to put up a bed for one sash than to be without the hotbed.

COOL AND WARM SEASON VEGETABLES.

Vegetables can be conveniently divided into two classes in regard to their temperature requirements. The cabbage, lettuce and onion do not need as high a temperature as tomatoes, squash or melons. It may be desirable therefore to make a division in the centre of the hotbed with a board thus enabling one to carry the heat loving plants at a higher temperature. It will help materfially in starting plants to consider the heat requirements of the plants grown.

EARLY CABBAGE AND CAULIFLOWER.

The Cabbage and Cauliflower for early crop should be started the last of March or early in April. In two weeks time when the first true leaf appears the plants are ready for pricking off into flats, about 2 inches apart each way, where they remain until set to the field early in May. The cabbage and cauliflower are cool season vegetables and can be set to the open as early as the ground can be worked. There is no great gain, however, in setting poorly developed plants to the open early, and unless they are well hardened off by allowing the flats to remain in the open for a week before transplanting they will suffer considerable check. It is better, therefore, to let the plants grow under good conditions and thereby develop better plants for setting out toward the latter part of May. The plants should have five weeks' growth at least from seeding before planting out to get thrifty plants.

The Copenhagen Market is hardly as early as the Jersey Wakefield, but it is a much better sort and forms a round solid head. Plants from seed started March 28th and priceked off April 10th were set to the open ground May 8th and gave marketable heads July 22nd weighing three pounds each.

Cold weather may come on after the early planting in May and the plants may take on an apparently stunted growth, but during this time the roots are becoming developed in the soil and when more favorable weather approaches they grow rapidly. A frost does not injure the plant if it is established in the soil. For early cabbage, therefore, let us get the seed started now.

The Cauliflower can be grown in the same way, and if given the same treatment will give fine large heads in July.

The root maggot has caused much disappointment to the grower of early cabbage and cauliflower. About the time the plants are making strong growth in June they commence to wilt and an examination of the roots reveals the cause of the trouble in the form of a white maggot which eats the tissues of the root at the base of the plant. This maggot develops from an egg laid by a small fly the latter part of May or early in June at the surface of the soil around the base of the plant. To prevent this tar felt discs are placed snugly around the plants right after they are set. The discs are made out of tar paper about 2 1-2 to 3 inches in diameter and a slit is cut ont half way toward the centre with a cross out at the centre of one-quarter inch to allow for the plant. The disc is so placed that it forms a collar around the base of the plant in the centre. This if carefully put around the plant at the surface of the ground keeps the fly contact with the soil and rather than deposit her eggs on the tar paper she will go to some other plants. If early cabbage are hoped for do not neglect the tar felt discs. It is only a short job to make them, and over 80 per cent of the cabbage can be saved from this troublesome insect by them.

The Eufurt cauliflower is the best variety to use. Cover the seed about one-quarter inch deep. The plants are a little more delicate than the cabbage and if the plants suffer a check from careless transplanting they may not from good heads. Examine the roots of the seedlings when pricking them into flats as sometimes the damping off fungus may cause injury to the outer tissue at the base of the plant in which case this part will be black and a poor plant will result.

EARLY LETTUCE.

Early lettuce can be had by starting the plants at the same time as early cabbage. The plants can be set to the open ground any time after the first week in May and it requires five weeks to grow good well hardened plants. Like the cabbage the early seeded well developed are necessary for early lettuce. It is also desirable that the plants be once transplanted into other flats as is the case with the early cabbage to get a compact root system which will start well under favorable soil conditions in the early spring.

Seed of Grand Rapids, one of the best open head varieties started in flats March 28th pricked into other flats April 14th and set to the field May 9th produced heads averaging in weight 1 pound 3 ounces on July 2nd. Whereas seed sown in the open ground May 14th and thinned to 6 inches apart produced heads August 4th weighing 15 ounces.

The All Heart is one of the best cabbage head varieties. The Hanson Improved is also a good one.

The All Heart planted as indicated for Grand Rapids gave heads on June 27th and July 2nd averaging 15 ounces and seed started in the open ground May 14th gave heads weighing 13 ounces July 28th.

ORDERING VEGETABLE SEEDS.

To decide what varieties of vegetables to order is often very difficult. One can in a measure decide from a seed catalogue, but as a rule they are rather confusing and possibly a list of those found to be the suitable will be helpful. We therefore will submit the following list as being quite suitable:—

Lettuce: Grand Rapids, Hanson Improved and All Heart.

Cabbage: Copenhagen Market and any of the Drumhead sorts for late and Danish Roundhead for winter storage.

Celery: White Plume for very early. Paris Golden for general crops and Winter Queen for late storage.

Cauliflower: Early Erfurt.

Onions: Globe Danvers, and Prize taker. For seeding outside Extra Early Red.

Tomatoes: Earliana and Bonny Best.

Peas: Thomas Laxton and Gradus for early and Stratagem for late.

Beans: Wardwells Wax. Stringless pod and Refugee or 1000 to 1.

Cucumbers: White Spine.

Carrots: Chatenay and Danvers.

Parsnip: Selected Hollow Crown.

Spinash: Bloomdale.

Radish: Ne Plus Ultra and Icicle.

Parsley: Champion Moss Curled.

Corn: Early Malcolm, Early Cory and Golden Bantam.

Beets: Selected Globe.

Squash: English Vegetable Marrow, Hubbard and Boston Marrow.

Pumpkin: Small Sugar.

TOMATOES.

Tomatoes require a high temperature and come into the warm season class of vegetables. It is not possible to plant out to the open ground until the first week in June. Six to eight weeks is required for developing good plants. If plants are carried eight weeks care must be taken to give them ample room and proper attention, otherwise they may be drawn or spindling plants of little substance A short stocky plant kept growing at a moderate temperature and given plenty of room is required. It is better, therefore, if much space cannot be given to develop the plant in six rather than eight weeks. The plant, however, two months old at planting time if carried and handled without check will give earlier fruit. The date of planting will vary therefore from the first to the 2nd week in April.

The seed should be started in flats, and when two to three weeks old are set to other flats 4 to 6 inches apart. It is better to give 6 inches, putting 6 plants in a 12 by 18 inch flat. Strawberry boxes are good for this work placing one plant in a box. Put a piece of birch bark or something similar in the corner of the boxes to prevent the soil from washing out thus making it difficult to water the soil in which the plant is growing. When ready to plant out the box is cut and the plant does not suffer a check from the soil having been disturbed. Aim to keep the plant in a vigorous healthy condition by giving plenty of ventilation and do not force growth too much but rather develop a sturdy plant which will stand upright when set out. In many cases transplanted plants are not satisfactory because they have been grown under high temperature conditions and when placed in the open suffer a decided check. See that the plants are well heardened by leaving them in the open during the last week particularly during the day. It will be seen, therefore, that to handle plants in this way more time than usually given for their development is necessary.

If space is lacking the plants may be first transplanted three inches apart and later set to the greater distance. The transplanting gives a more compact root system and the plant will as a result do better when set out.

The Earliana is without doubt the earliest variety. The Bonny Best is a little smoother and a little later. The Early Jewel is a good later sort.

HORTICULTURE.

Canada's Insect Destroyers

The Woodpecker and Chicakee are Especially Active in Trees and Foliage.

Canada's bird visitors are rapidly returning for the warmer season, and we may again look forward to their assistance in the destruction of caterpillars and insects, so destructive to our trees.

One of the most important of these birds is the woodpecker. It feeds on larvae and small insects, which are found in crevices of the bark; securing them with its protrusible tongue. This tongue is sharp, hard at the end, can be directed backward, and can be extended several inches. The red-headed woodpecker, besides digging insects out of the bark, seizes them on the wing. In the examination of over 700 stomachs of woodpeckers, animal food, mostly insects, was found to constitute 76 per cent of the diet. The animal food consists largely of beetles and caterpillars, and includes many harmful species.

The chickadee is another of our most active insect destroyers. It is especially active in the vicinity of any timber or wood chopping. The birds will become very familiar, and will readily make friends. Not being equipped, as the woodpecker is, with a long bill, they take advantage of the cutting of cordwood, etc., to secure the grubs found under the bark or exposed in the cutting. As a rule, however, they feed upon the insects of th orchard, the bush or shrubbery.

The woodpecker and the chickadee are only two of the many birds which are of great service both in the city and country, and it is surely not too much to ask that people give them the necessary protection to allow them to continue their invaluable work.

Cover Crops

Every well cared for orchard should include in its management the use of cover crops. These consist of crops which may be sown in the fall or late summer among the trees, which remain on the ground through the winter and are ploughed under in the spring. The practice of growing cover crops in the orchard is not a new one and can well be given greater consideration among the fruit growers.

Cover crops have no particular place in orchards that are left in sod or possibly ploughed in the spring, harrowed once or twice and left to grow up with grass and weeds. Neither have they any place in the management of orchards where the mulch system is in use, but are especially adapted to methods of clean culture.

Cover crops have a number of things to recommend them which are of considerable importance to the orchardists. Among these may be mentioned the following:

1. They check the late fall growth of the trees by utilizing the surplus plant food.

2. Help to prevent deep freezing of the ground by retaining the snow during the winter.

3. Utilizes plant food that becomes available late in the fall, and that would otherwise leach out by the rains.

4. Adds humus to the soil when ploughed under in the spring.

5. Helps maintain fertility and increases the moisture holding capacity of the soil.

6. If the cover crop is a legume, it will tend to increase the fertility of the soil.

7. Helps to prevent the washing of the soil on side hills.

These cover crops should be sown in late summer, after the trees have made the desirable amount of growth, usually in August. The seed are scattered broadcast and worked into the soil at the last cultivation. They are allowed to grow as much as they will until the following spring, when they are ploughed under.

There are a number of different kinds of successful cover crops, such as buckwheat, oats, vetch, clovers, winter rye, winter wheat, field peas and essex rape. These may be used singly or in combination. A good plan is to use two kinds, one resistant to frost and one easily frozen. Such combinations as buckwheat and winter rye, or oats and rye, or essex rape with winter rye, would work successfully. The buckwheat would come up quickly, thereby taking food away from the trees to check their growth. The winter rye would come on slowly, and when frost cut the buckwheat, would take its place remaining on the ground over winter. The vetches are good, but the seed rathe too expensive. The same is true of field peas. Clovers may be used, but their growth is slower and there will be less to turn under in the spring.

Where any of these crops are used alon, the quantity of seed sown should be the same as when sown for a crop in the open ground. Where combinations are used, a little more than the usual proportion of each would be desirable. Where two are used, 60 per cent of the amount of each where grown alone; where three are used, 40 per cent of each. This method would add from $2 to $3 per acre to the cost of the ordchard each year, but would return profits in fruit many fold.

B. S. Brown,
Professor of Horticulture in Maine Farmer.

Experiments in Europe on the Selection of Seed Potatoes

The following points were studied experimentally:

(1) The influence of the size of the tuber upon the yield.

(2) The comparative yields of 1 gr. of seed potato substance in tubers of different weights.

(3) The influence of the size of the tubers upon the number of potatoes harvested.

(4) Whether the size of the tuber has an influence upon the average weight of the tubers of the crop.

(5) The yield of the tubers in proportion to that of their parents, or in other words, how far the effect of heredity is observable in the crop of tubers.

(6) Whether the number of tubers and the weight of the tubers are hereditary characters in the potato.

(7) The result obtained by planting two tubers in the same hole.

For his experiments, which extended from 1908 to 1913, the writer used three varieties of potato "Sechswochenkartoffel," "Eierkartoffel" and "Up to Date," which were planted according to the usual method.

For comparison, tubers taken from plants of the same pedigree were used.

The results of the experiments may be summarized as follows:

(1) With the increase in the size of the tuber the crop increases more than is generally supposed. The greater cost due to using larger tubers is better repaid by early than by late varieties. When the tubers regularly used for planting are larger than the average potatoes harvested, the advantage of selecting the seed tubers is much less than when the tubers are smaller than the average potatoes of the crop. The advantage of a large seed potato is greater in soil that is little or not at all, manured, than in the case of well manured soil.

(2) The larger the seed potato the smaller the yield in proportion to 1 gr. of seed potato substance. If, there-

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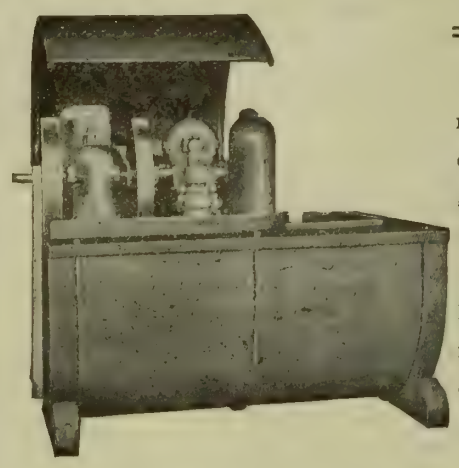

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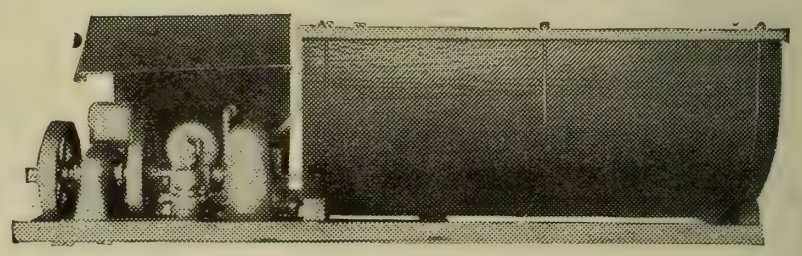

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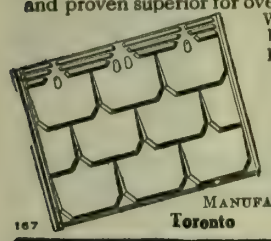

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fore, it is necessary to economise seed and the farmer has sufficient land at his disposal, small tubers may be planted with advantage.

(3) The greater the weight of the tuber planted, the larger is the number of tubers on the plant produced.

(4) A large seed tuber usually produces small tubers and vice-versa.

(5) A tuber from a plant of large yield generally gives rise in its turn to a highly productive plant. Tuber yield is therefore a hereditary chraac ter.

(6) The number of tubers is a hereditary character, but one which is only observed on comparing, from the point of view of their yield, parent plants derived from tubers of the same weight. The size or weight of the tubers is not a hereditary character, and consequently it is not possible to obtain heavier tubers by selection.

(7) By planting two tubers in the same hole, no larger yield is obtained than if one is planted.—Bulletin of Foreign Agricultural Intelligence.

Nitro Culture

For a number of years the College of Agriculture at Truro, Nova Scotia, has been sending to farmers in the Maritime Provinces cultures of bacteria for treating the seed of Clover, Alfalfa, Peas, Beans and Vetches. Farmers who have not had success in growing any of this class of plants have been advised that the lack of success may be due to several things such as poor soil, lack of drainage, acid conditions, etc., but that it may also be due to the lack of the presence of those bacteria which are necessary to develop the well recognized nodules on the roots of these plants.

The results up to date have indicated that inoculation with these bacteria is almost indispensable in the case of Alfalfa. In the case of Red Clover, Alsike Clover, Vetches, etc., the inoculation has given splendid results in from 50 to 60 per cent of the cases. In the balance of the experiments no damage has been observed.

All of this points to the desirability of farmers who wish to get good stands of these leguminous crops to experiment further with nitro culture for inoculation of the seed. In order to make the experiment easily possible for farmers, the College of Agriculture at Truro are continuing to send out bottles of the bacterial culture containing sufficient material to inoculate 30 pounds of seed, for the nominal sum of 20c. A different culture is required for each plant, that is, Alfalfa, Red Clover, Alsike Clover, Peas, Beans, Vetches. Anyone who is interested in this work should correspond with the Principal at the College of Agriculture Truro, N.S.

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CORN—Ferguson's Early Malcolm, pkt.....10c, 1-2 lb. 30c, 1 lb. 50c
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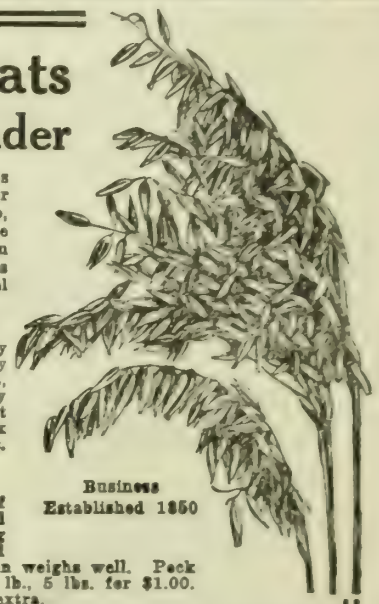

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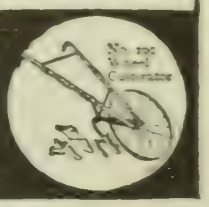

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DAIRYING.

Breeding and Raising Dairy Heifers

Following is the paper read by Mr. W. M. Lea, at the recent Dairmyen's Association.

This subject is an old one, possibly the most ancient of all subjects discussed at dairy meetings, but however much may have been written or spoken on the question it is my opinion that the greater need of the dairy industry in this province today is "better cows" and whole herds of them. We have hardly started herd improvement in earnest, yet it is right and proper to cull out unprofitable cows when we prove them such, but little gain if we don't raise a better one to take their place; yet we continually meet farmers who admit that it is hard for them to raise good calves and to any observing person who travels this country this is only too true.

The foundation of the dairy industry is built on the kind of heifer calves we continually raise to renew our herds and to any who have thoroughly tested their flocks the difference in production of their cows is astonishing. We need only to calculate what the profit from our herds in a season would be, if each individual were the equal of the best cow, to realize how important a feature the breeding end of the dariy industry is.

Since the adoption of official testing in all breeds of dairy cows it is now comparatively easy to pick a sire that will likely produce good dairy cows.

A law of breeding is that like produces like, but there is a law of variation which occasionally contracts other laws, and while it is true that sires of any breed will generally transmit the characteristics of their immediate ancestors, up to the fourth generation, we quite often get freaks, a striking contrast to the parent stock, and my experience has been that these so called freaks or variation in type will prove os prepotent and as impressive as any other sire. I can call to mind several instances of inbreeding in horses, a standard bred stallion that had produced a large number of fast horses had a full brother who could neither show any speed nor in any one instance sire a trotter, he was a freak or the law of variation, but transmitted true to his type.

This being the case it behooves us to use great care in the selection of a dairy sire, and because a bull happens to be full brother to a proven breeder is no guarantee that he will do the same, good breeding bulls generally "look the part." Nearly all that I have known in the Maritime Provinces who were known as good show bulls or confirmed closely to the recognized dairy type have proven good breeders. To any experienced breeder a male as well as a female can have a milky look, and I do not agree with the extremists who say they do not care a snap for type in cows that the scales and babcock test is the only guide.

At the present time there is a craze for big records and a lot of breeding is done on paper regardless of how the animals may suit each other. Big records are good, but we want strong robust breeding animals as well, and for my part I want a nice looking cow (good cows have not got to be homely) a good looker will milk just as well and both she and her offsrpring will sell better, so in choosing a bull we want one from heavy producing parents and one of good size, strong constitutional vigor and that will class as a good show bull of his breed Such an animal will be pretty certain to transmit the best qualities of his parents.

Whereas if a bull of well bred good looking ancestors happened as is sometimes to be rough coarse and not of good dairy type, I would not use him under any circumstances as he would most likely produce his own peculiar type, and I know of many disappointments through dairymen buying an animal solely on the history of his ancestors' production.

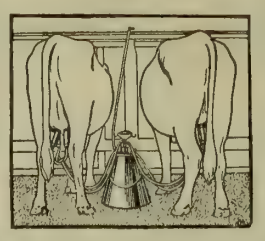
Now as it is evident breeding is something of a lottery it would be wise for dairymen whenever possible to try a proven sire. When a bull has proven through his producing daughters that he is an extra good breeder, he should not be sent to the block when still in his prime. I can call to mind several instances where superior breeders were sacrificed. "Sir Rooker Posh Artis" sire of "Miss La Honda" that made a world's record at the late Amherst dairy test, and also sire of many other noted producers and cows of superior type.

We secured him in a trade, used him as long as needed, and were then forced to sell him at the cheapest kind of beef price while yet in his prime, while at the same series of shows we sold some seven young bulls. A mature animal may be more trouble to handle than a younger one, but when we consider the great difference there may be in the cow sired by a proven sire over an untried one it seems the greatest folly to turn a superior animal down for this reason. A bull is no older than a cow of same age in any particular, and a good bull is easily half the herd. A cow howver good has but one calf a year, but the bull has every one in the herd, and many a breeder of pure bred stock has been brought into prominence and put financially on his feet through the fortunate purchase of one good bull. I have gone into this subject at length as I consider it a most important one, and from the enquiries we receive as breeders I think farmers in general do not lay strees enough on securing a good producer, as most enquiries will specify a particular age, mostly from one to two years old, I received an enquirey quite recently from an institute asking for two sixteen months old bulls, and while it may seen to be about the right age to buy (if they were correct in every other way) age is only a secondary consideration, and not comparable to producing ability in an animal, besides every man should know that they wont likely be able to get any breeder's best bulls at that age. First come first served, and the best bulls usually go under one year, so it will pay to buy early for this reason, or get a proven breeder which is the safest plan.

Then when a heifer calf from one of the best cows is born if you decide to raise it, decide also to grow it well and start right, give it whole milk warm as it comes from the dam until it has put on some baby fat. Don't wean until it would make good veal, then when you begin to feed skim milk, weigh or measure its feed and ning as is our practice with some older don't be too anxious to feed up to its capacity. Nearly all the trouble with stunted calves is brought on by indigestion through feeding too much skim milk. We now always weigh every calf's milk up to three months, its most important. Don't think you can guess near enough, you are almost sure to give enough at some time to cause scours and give your calf a set back that it may never fully recover from.

Prevention is a whole lot better than cure, in this respect see that your milk is always warm, as blood. If it gets cooled from any cause don't risk feeding it before warming, and place bran, crushed oats and a little oil meal in a box where the calf can get it all the time, it will learn to eat of its own accord as soon as it requires dry feed, especially if it is run-

Independent of Hired Men



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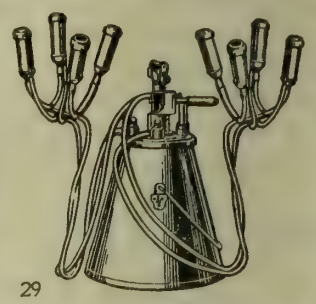

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calves. Give it all it can eat of this up to six months, also good hay and pulped roots if you have them, then if you are careful not to overfeed or scour your calf with milk you can grow it as fast as possible on these feeds and have a calf at six months, fat, slick and in perfect condition. We don't expect to have our calves carry much flesh before this time. Skim milk is a splendid grower, and if you have it feed up to a year to a good calf, it will do then with less grain, but the most important period is from birth until three or four months. Get them growing steadily past that period without a knock down from scours and you can have a good calf on any kind of good feed from that on.

If you intend to breed to freshen at 24 or 25 months, you will have to feed very generously or your heifer will never attain her proper growth. It is a matter for each dairy man to decide at what age in his particular circumstances he had better have his heifers freshen. If bred early we must feed very heavy to keep the heifer growing and increasing in flesh as she approaches calving that her milk glands and udder may develop properly, for if for want of proper nourishment we allow her to grow thin the calf will sap her strength, weaken and stunt her under these conditions it is folly to expect the heifer to develop properly and she may be ruined for life.

But if she be allowed to run until 34 or 36 months before calving she can be fully grown on rougher and less costly feed, it will take less grain to put her in good condition, and there is no risk of stunting her, but we will have lost a year's milk, and if a pure bred, probably a valuable calf, so its just questionable at what age we should have them freshen. Probably about 30 months would be the happy medium if we could order these matters as we would like, but at whatever time we decide on, we should see that the heiber is well grown for the age and in good fleshy condition. We seldom now see or hear much about keeping the dairy heifer in good condition but not fat, as almost everybody of any experience have been convinced that the more flesh a heifer carries the better she will milk, both during her first lactation period and for the rest of her existence.

To make dairying profitable we must have better cows, better "herds" of cows, and to secure a full supply everybody in the business must breed and feed for them. The amount of wealth annually lost to this Province through keeping so many poor producers is enormous. Every cow should be bred to a pure bred sire that a sufficient number of heifer calves may be available. At the present time not nearly enough good bulls are kept. The breeding season for the majority of cows is July and August, two very busy months on every farm, and its a temptation to use any little runabout if the good bull is very far away. Many farmers yearly make resolutions to breed every cow to a good bull and end up with one or two. This too important a matter to be so neglected. If good bulls were kept within reasonable distance of everybody, we would soo have many more good cows in the country, and they are badly needed. If the keeping of several pure bred bulls were a heavy tax on a community there would be some excuse for using little scrubs, but when good bulls of breeding age can usually be purchased for from $75 to $100 it is foolish to keep scrubs at only a trifling saving. In this way all it will cost is his feed and interest on investment which to my mind is an easy way to get into improved stock and every farmer can raise them without purchasing any females if he persistently breeds to the best bulls he is in reach of. If the first or second crop of calves prove disappointing as milkers. don't change the breed before you change the bulls several times. Everybody can grow 40, 50 and 60 lbs. of milk a day grades if they persistently carry out this work. Take weights and records at least three times a month. This will be found accurate if you take weights and samples carefully. It is very little trouble and pays big returns. Just consider what every farmer is losing by not having every cow the equal of the best, and what the province is losing by not having the majority up to th standard of some of the best.

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LIVE STOCK.

Granular Veneral Disease Has Vital Relation to Contagious Abortion in Cattle

(Office of Information, United States Department of Agriculture.)

The United States Department of Agriculture, in co-operation with Cornell University will shortly publish a professional paper Bulletin No. 106, entitled The Granular Venereal Disease and Abortion in Cattle. This disease may be defined as a chronic infection of the genital tract of cattle, manifesting itself in the form of granular or nodular elevations in the genital mucous membranes, chiefly of the vulva and less frequently of the vagina.

The importance of abortion and sterility in cows is rapidly becoming more acutely felt by breeders, according to the bulletin, and is each year playing a more serious part in the national economy. By interfering more and more with the reproductive powers of cows, these diseases exert an unfavorable influence upon the production of meat, milk and dairy products, decreasing the supply and increasing the cost.

Innumerable reasons have been assigned to account for abortion and sterility in cows. Abortion has been regarded as the result of blows, goring, kicks, slips, falls, various feeds, water, drugs, etc., and finally when the abortions are numerous to contagion. Sterility has been attributed also to a great variety of causes—to the character of the feed or water, to poverty, and overfatness, and, as with abortion, when the cases are numerous, to contagion.

Veterinarians who have investigated abortion in cows in recent years have agreed that in a very large percentage of cases it is due solely to contagion.

The report then gives, in detail, the results of a large number of examinations of live cattle, supplemented by a large number of post-mortem examinations at slaughter-houses. These examinations have shown the granular veneral diseases to be present in a large number of cases of abortion.

The conclusions of the author as to the effect of this disease are as follows:

The granular veneral disease of cattle is, so far as known, universally distributed. From clinical observation, it has a vital relation to contagious abortion. It is incurable in the present state of our knowledge, but may be greatly decreased in virulence.

The ordinary if not sole avenue of the infection of contagious abortions is the genital canal, and the invasion antedates the sealing of the uterus, which ordinarily occurs within 30 days after conception.

In the present state of our knowledge, little or nothing can be done to prevent abortion once the pregnant uterus is sealed and the infection of contagious abortion exists within the hermetically sealed cavity.

By systematic disinfection of the genitalia immediately following abortion or premature birth, and also in retained afterbirth and kindred infections of the uterus, the affected animals may be largely guarded against future sterliity and abortion. It is even more important that the vaginae of heifers, whether virgin or previously bred, and cows shall be systematically disinfected for a period before and after breeding, until conception is assured.

It is equally important that the genital organs of breeding bulls be kept clean by regular disinfection, including washing immediately prior to and after service.

Most important of all, breeders of valuable cattle should institute definite, energetic and permanent efforts to guard new-born calves simultaneously against the three great dairy scourges—calf scours and pneumonia, abortion and sterility, and tuberculosis.

The following are the author's recommendations for the breeding of sound animals:

We would outline the following plan for the breeders of pedigreed and valuable dairy cattle with a view to the production of cleaner and more efficient herds.

1. The construction of arrangement of independent maternity and calf nursery stables, embodying all modern requirements for ventilation, light, heat, convenience for disinfection, and ample facilities for the exclusion of flies. The stables should provide sufficient individual stalls for all calving cows and indivdual stalls for calves until at least three months old.

2. A cow which is about to calve should be well cleaned and her posterior parts disinfected, after which she should be placed in a clean stall some days prior to expected parturition. Pending partuition, the stall

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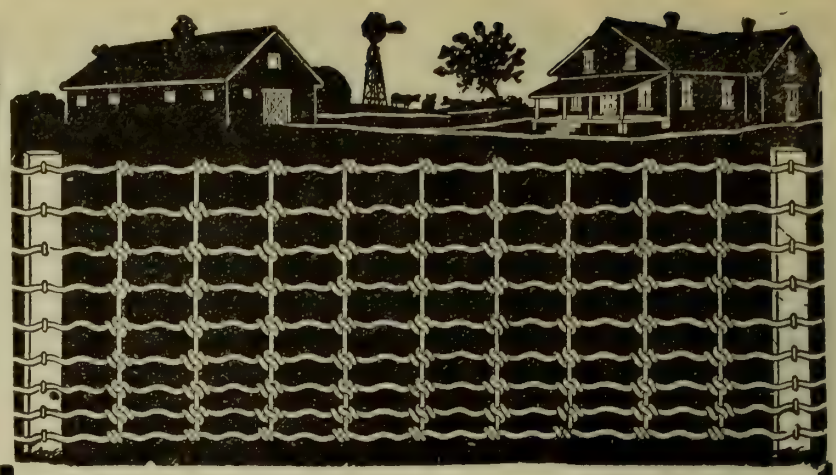

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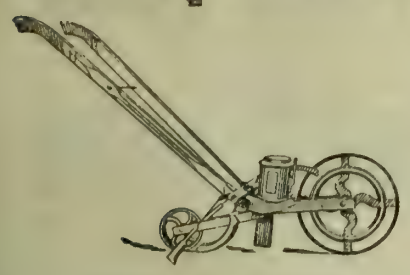

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should be kept scrupulously clean and well disinfected. The tail, vulva, buttocks and udder should be disinfected twice daily. In order to avoid the danger of infection to the calf while passing through the vagina of the cow during birth, either by the infection of white scours, the granular veneral disease, or other malady, the vagina should be irrigated daily with a mild disinfectant such as 0.5 per cent Lugol's solution. Such attention to the vagina also tends to carry away any infections within the vagina, which immediately after the opening of the cervical canal of the uterus at the time of calving may otherwise drop into the uterine cavity and there establish disease.

3. When the calf is born, it should be received upon a clean antiseptic sheet and at once carried to a clean calf stall and rubbed dry. If it is temporarily with the cow, great care should be taken to see that the bedding is kept clean.

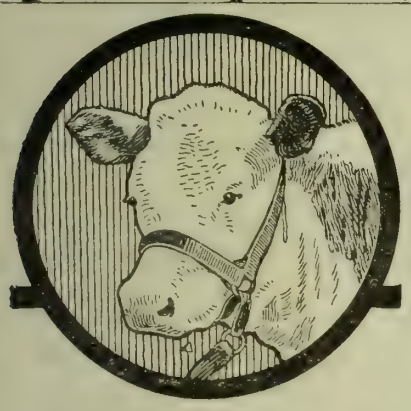
After the calf has been dried, if not earlier, the stump of the navel cord should be disinfected. It should not be ligated. Prepare a warm 1 to 1,000 solution of corrosive sublimate, fill a goblet or cup with it, and, having the calf held in a standing position, press the vessel against the floor of the belly, so that the stump of the navel cord is submerged in the disinfectant. Hold it in this position for at least 10 minutes. Immediately afterwards, dust the stump of the cord over liberally with a disinfecting desiccating powder, as alum and camphor, and repeat every 30 minutes until the stump is dry.

The body openings (mouth, nostrils, vulva of heifer and sheath of bull calf) should be disinfected with a 0.5 per cent Lugol's solution.

4. Prior to drawing milk from the dam or other cow for feeding the calf, or permitting the calf to suck, the udder and adjacent parts of the cow should be thoroughly disinfected. The milk should be drawn in a sterile vessel under the strictest cleanliness. If the milk is from a cow not known to be free from tuberculosis, it should be sterilized before feeding. Individual feeding vessels should be used and regularly sterilized.

When calves have reached three months of age, it may usually be fairly determined if they are free from disease, in which case they may be handled in groups. These, however should be kept as small as economically practicable until the heifers have calved and are ready for the dairy. Even the the larger the number of animals in one stable the greater the risk of infection and the more destructive will it be if it gains entrance.

5. When breeding time for the heifer grown under the foregoing conditions is approaching, we would advise that her vagina be douched once daily at least three weeks before breeding, at first with 0.5 per cent Lugol's solution. The douching should extend over at least one estrual period, or 21 days prior to breeding, or until it is determined she is pregnant. The bull should preferably have been grown in the same manner as the heifers he is to serve, and his genitals douched in a similar way.



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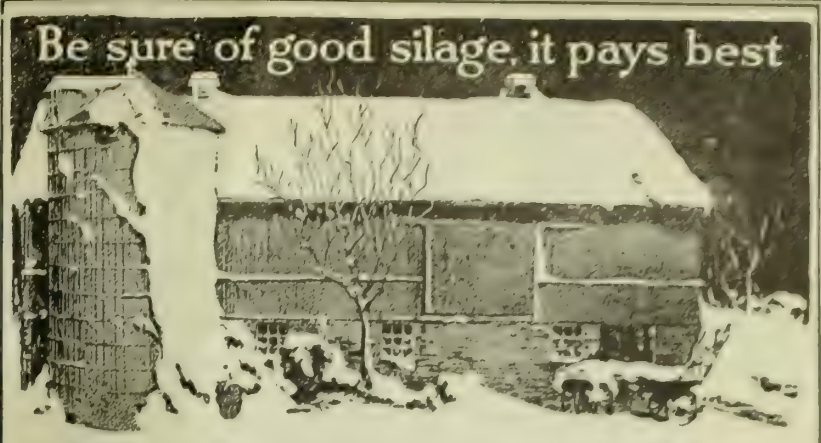
Protrusion of the Rectum in Pigs

Generally this trouble has something to do with the feeding, but the actual cause is either constipation, as in weakly, pot-bellied young sows, long-continued diarrhoea, both states of the bowels giving rise to straining, which not only causes the protrusion, but operates adversely when attempts are made to return and retain the gut. In the treatment of the trouble there is nothing whatever to be gained by adopting a waiting policy. The protrusion rarely, if ever, recedes, and when finally the veterinary surgeon is sent for he finds himself greatly handicapped by the swollen condition of the part, and its dryness consequent on constriction and long exposuse to dirt and atmospheric air. Young pigs, which are very liable to it in cold weather, are easily treated if the bowel is promptly returned and careful attention is paid to the diet Before replacement is attempted the rectum should be emptied, and thoroughly cleansed by washing in tepid water or milk. A most useful lubricant, being at the same time mildly astringent and soothing, is the compound gall ointment of the British Pharmacopoeia. It is a mixture of powdered nut-galls and opium in lard. it relieves pain and prevents the straining, which operates so adversely in the returning and retention of the organ.

(Continued on Page 474.)



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The few dollars a man may hope to save by buying a "cheap" silo will very likely be the cause of his losing, through poor silage and the short life of the silo, many times the amount he seemed to be saving on the first cost. Your good judgment should warn you against taking chances of losing your feed by putting it in an inferior silo.

The reasons why Ideal Green Feed Silos preserve the silage better and last longer are completely explained and illustrated in our large silo catalogue, a copy of which will be gladly sent you upon request. It will pay you to ask for this catalogue before you finally decide on what silo to build.

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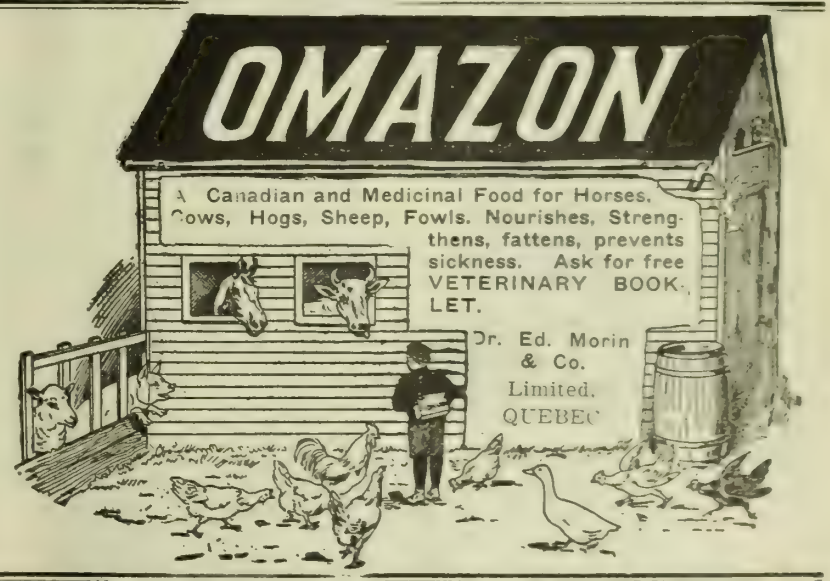
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THE HORSE

Breeding Out Defects.

By A. S. Alexander, V.S.

It is an axiom of breeding, or heredity, that "like produces like," or tends to do so, and that is true; but it is not the case that nature tends to strike an average or effect a "happy compromise" between two markedly unlike items of conformtion or temperament. This is not commonly understood by the stock-breeder who has not made a special study of this perplexing subject.

Poor feet and bardly-formed hock joints are two most common faults of the horses we breed upon the farm. How shall we get rid of these objectionable features of our horses? Not by breeding to sires that have directly opposite features. That is the common plan of procedure, and it is erroneous. The common sense, logical and correct procedure is to employ sires as nearly perfect as possible in the points deficient in their mates. It is an even better plan to discard at once the mares that have the objectionable features and breed from those having the desired conformation, mating them with sires of like desirable conformation.

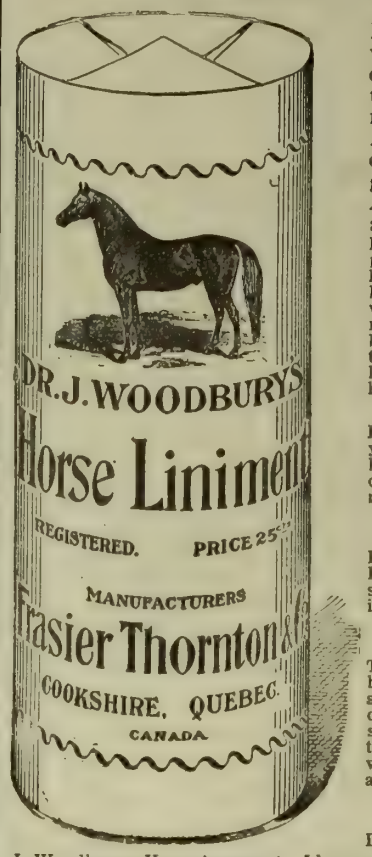
To make this move plain it may be stated that when a man finds that the horses he breeds have small, poor quality feet (hoofs) his plan of corrective action too often is to mate his mares with a stallion that has abnormally developed feet. Such feet are as objectionable as feet that are too small. Two objectionable types of feet, wholly dissimilar in type, will not in the foal be reproduced as an average between the two types. In other words, the too big and the too little hoofs will not blend and make correct size hoofs in the offspring. Two wrongs do not blend to make a right, but one right and one wrong may partially offset each other. If one right is stronger (by breeding) than the wrong the resultant blend of the two may, but does not surely favor the right. The correct way to attempt righting of the wrong, i.e., improving the small weak feet, is to use a stallion that has the most perfect feet possible and that owns such feet because of ancestors that had like desirable feet. The best plan from the start is to select mares having the right sort of feet and mate thhm with stallions having the same sort of feet, or even better feet, if that is possible. In breeding horses we have found that it is a slow uphill disappointing matter to breed out faults by the use of sires not possessed of these faults. This applies to the breeding of better feet, but more especially to the improvement of badly formed hock joints.

A fine, large, pure-bred Percheron mare that was well-nigh ideal with the exception of having hocks that approached the sickle type, or curby formation, was mated each spring with a pure bred Percheron stallion. Each of these stallions had hocks of correct conformation and in one instance hocks of the somewhat too straight type. Each foal from this mare so mated grew up with hocks like those of the dam. Some of the offspring had hocks of more accentuated curby formation than those of the dam. All of them had objectionable hocks in this particular. We knew the sire of the mare in question. He was a noted Percheron stallion 20 years ago, but his hocks were objectionable, being weak in conformation, somewhat of the sickle order, and one of them showing a small bone spavin. The mare inherited poor hocks from the sire. No doubt he in turn came by such hocks through heredity, and the wrong shaped hock in this family is so strongly bred in the "breed and bone" that life is too short, apparently, successfully to obliterate it by selective mating. We got rid of the mare and most of her female progeny, and other mares of better type have been installed in their place.

Based upon actual, extended practice and observation we have no hesitation whatever in advising readers never to buy or employ a mare for breeding purposes that has a bad fault or conformation, with the hope that in time the offspring may be made free from that fault by use of sires of opposite type, not having the same fault and even extraordinary excellent in the opposite direction. This advice applies with equal force to the breeding of animals other than the horse. Faults of conformation cannot readily be bred out. In all instances for quick results and satisfaction in breeding, decide upon an ideal animal to be produced, start with a

Dr. J. Woodbury's Horse Liniment

THE INFAILLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

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This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

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The old idea of eczema being a disease of the blood has been pretty well exploded by the record of cures made by Dr. Chase's Ointment.

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It is wise to look after your general health, keep the bowels regular and the blood rich, but you can depend on Dr. Chase's Ointment to cure the eczema if you will do your part and apply it regularly.

Mr. W. H. Roberts, Charlottetown, P.E.I., writes: "I can recommend Dr. Chase's Ointment to anyone suffering from itching skin disease. I had eczema on my leg and suffered terribly from the itching. I had a doctor treat me for four months without relief, and I was getting worse all the time. A second doctor gave some relief for a time, but made no cure. I tried several advertised treatments, but without relief until I used Dr. Chase's Ointment. This ointment cured me in a month. That was twelve years ago, and I have never had a sign of the old trouble since.

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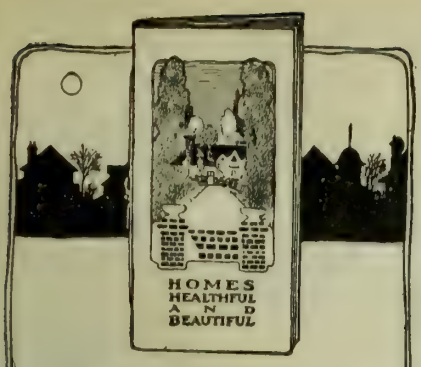

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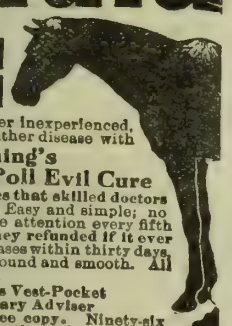

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female or two as nearly of that type as possible and continuously mate with sires of that chosen type. Discard every female that does not approximate the chosen type and, so far as possible, only retain as breeders the ones that are above average in the desired type. Do this also in the selection of sires and there will be good reason to expect that the progeny of such animals will retain the desired type and possibly improve in that respect, if improvement is possible.

Remember that quick results for the better cannot come solely from one side of the breeding equation. The nearer the two factors in the equation are alike at the start the more certainty will there be in obtaining the sort of stock desired. Gradually by continued grading up, by the use of pure bred sires, the type and character of the pure parents become dominant; but all the while this warring element from the dam's side and ancestry seeks ascendency and lessens peramnency of improvement. For quick results never start with widely diverging types, or violent opposites of blood.

In conclusion, to clench the idea here adviced, let it be said that we have known many men to fail in horse breeding because they bought a lot of cheap, foot-sore mares in the city and used them as breeding battery on the farm, hoping and trying, for a number of years, to attain improvement and success simply by the use of good sires and good feed. better and quicker results would have been had by starting with one ideal well developed brood mare of the type desired and mating her and her female progeny in turn, year after year, with the same sort of purebred, rightly formed sires used with disappointing results upon the city mares of the wrong type.

Stable Notes.

White Legs and Disease.

Some time ago, relative to a case of "mud rash," a man said to me that he "never had any but a white foot affected." This is not the general experience, for I have seen horses of all colors denuded of hair over the skin of the belly, inside the thighs and the legs, and white skin has no monopoly of either the acute or chronic forms of erythema we call mud-fever and cracked heels; but the necessity for washing the legs, or the manner in which, owing to the limited time at the disposal of the carter, the washing is carried out, does undoubtedly induce disease. There is, however, an impression prevailing, not only among the owners of animals, but among many veterinary surgeons, that white skin is peculiarly subject to disease. There is the eczematous inflammation known as "crown scab." This is chiefly seen affecting animals with white faces and legs, and some have gone so far as to affirm that it it not known to attack any but the white portions of the skin, and that animals without any white hair are exempt from it. Sheep with white legs and faces are considered to share with horses the liability to this disease. Personally, I have never observed any special liability of white skin to disease simply because it is white, but have no doubt that repeated washing and imperfect drying tends to cause it to become diseased. We certainly see more white heels that that are cracked or affected with chronic erythema, and more white legs that are greasy, than we do dark ones; and whether this is due to constitutional tendency, or to badly-directed efforts to keep them clean, it is certainly a sufficient reason for discouraging rather than for encouraging the breeding of horses with white legs. Look at the state into which white legs, and especially the hind ones, get merely from standing in the stable. They stand in the most moist and dirtiest parts of the stall, and one soiled foot is rubbed against the opposite limb. The white becomes a dirty brown or yellow, and soft soap with hot water is employed to restore it to something like its pristine "flash" condition. Soft soap produces a very irritating effect on the skin, ownig to the strong alkali it contains. It is frequently not all lathered up or properly rinsed out, and even if the washing and rinsing are perfect, the drying is necessarily perfunctorily performed, because no one man with several horses to look after has time to dry thoroughly the long hair about the heels. Everyone of any experience of the management of horses under working conditions agrees that the principal causes of mud fever. cracked heels and grease are washing and insufficient drying the legs, especially where

(Continued on Page 472.)

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We introduce the "Barron" strain of White Leghorns to this part of Canada.

The following are extract copies of Mr. Barron's invoices :—

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To 12 White Leghorn Pullets bred from a 260 egg hen, and one Cockerel, brother to my little hen that broke the records of Europe, Canada and America with 282 eggs.

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This is the strain we offer you, backed up by our assurance that during the severest weather of the past winter our birds were making records considerably over the 200 egg mark.

Eggs for hatching, guaranteed off the above stock, $3 per setting of 13. Unfertile replaced at half cost.

Ten strong, vigorous day-old Chicks, guaranteed off the above stock, $3. Twenty Chicks, $5.

Orders for Eggs shipped now. Orders for Chicks shipped in May or earlier if wanted.

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POULTRY

Why Don't Hens Lay ?

If there is any one question which is asked more than any other, it is, "Why don't hens lay?" and it is my intention to tell you some of the reasons why they don't.

In th first place, let us consider the breeding of the birds. There are many varieties and breeds, all of which have good producing strains and poor producing strains. Now, if these birds have come from a strain which has been bred more for fancy purposes, for feathers, than for utility purposes, or the production of eggs, it stands to reason that all the attention was given to the fancy, and none, or practically none, to the other. And everyone knows that to get a good producing strain, we must give considerable time and thought to the selection of breeders.

Now let us consider the time of hatching. If the birds were hatched out late, say from the last of June on, unless they had the very best of care, they would not begin to lay before cold weather set in. You might have a flock of pullets which had developed well and which looked fine, but they probably would not begin to lay in cold weather. Pullets should begin to lay by the early part of November, anyway, in order to be well under way before real cold weather begins.

Feeding is the next important factor to be considered. Regardless of the breeding of the parent stock, if the stock hasn't been well fed and cared for, it cannot lay. If the chicks have not been supplied with sufficient green food, a variety of foods, bone-forming material, good clean water in clean containers, clean hard grain, and plenty of shade, then they will have been neglected and egg production.

Housing is another factor which causes trouble. If the poultry house is cold, or damp, or nasty, or dark, or drafty, the hens cannot lay as they should. If the hens are crowded, they cannot have sufficient room for exercise. The stronger birds will crowd the weaker ones from the food, eggs are liable to be broken if the nests are crowded, and the habit of egg-eating contracted, which, when once established, is hard to break. They cannot get sufficient fresh air, the air becomes foul, the spread of disease is more rapid, and the general health of the fowl is affected. It is felt first in the egg production.

Since the foregoing are some of the reasons why hens do not lay, perhaps it would be well to point out some of the reasons why hens do lay.

First, let us consider the breeding. If a person has, by constant selection of his stock, obtained a strain of fowls which are good producers, one ought to get a cockerel from that person to use with his own stock. From his own stock, select those pullets and band those which begin to lay in October, or early in November, and then breed from them. If you wish to breed from yearling hens, breed only from those which molt late, even though they lay but few eggs the winter that you select them. Select a cockerel which is a good, vigorous, healthy bird, one that has never been sick, one which crows loud and often, and a fighter.

Feeding is next. From the very first the chick wants to be kept growing. There must not be any period in the life when it was stunted. The first feed should be given at 36 to 48 hours old, and should be sour milk. Feed the chick a variety of good sound grains, give it plenty of range, with some shade, plenty of fresh water, and dry, clean quarters, and it will grow well. Give it grit, shell, gorund bone and some meat scraps.

The brooding of the chick, especially when small, is a problem. For us in this climate, the open-front house of the Aubry type is very good. The coal-burning brooder is probably the best method yet devised for the brooding of the chick. It gives the heat to the chicks on their backs, there is no tendency to crowd toward the centre, there is a constant supply of fresh air under the hover, which is so essential, and there are different graduations of heat to which the chick can adapt himself. The house should

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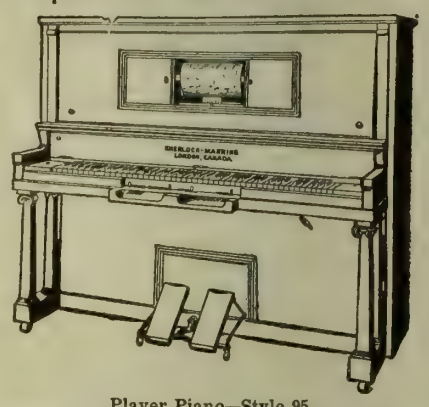

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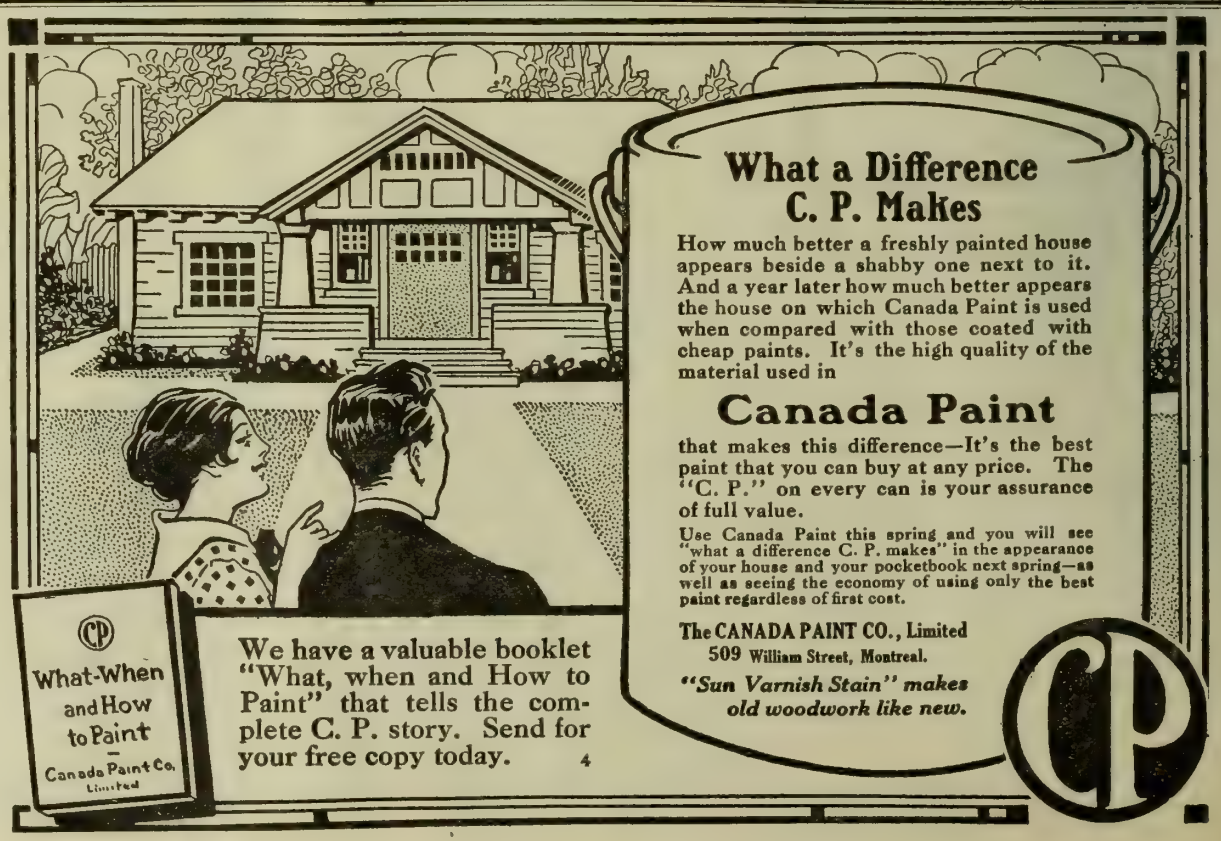

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"Sun Varnish Stain" makes old woodwork like new.

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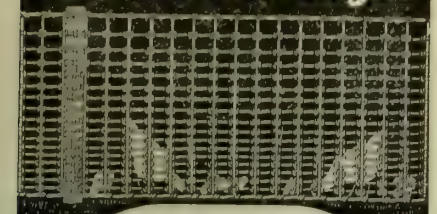

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is not mere poultry netting—it's real fencing. Every intersection of wires is securely locked together. They can't slip or get loose. It is made of Open Hearth steel wire with all impurities burned out and all the strength left in. Well galvanized. Top and bottom wires are extra heavy. No top or bottom boards needed. Requires less posts than ordinary poultry fencing.

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be kept scrupulously clean and free from lice, as cleanliness is essential to the production of eggs.

The poultry should be housed early in the fall, in September, so as to get them used to their winter quarters, and also to teach them to scratch for their food, which exercise is a benefit in helping to develop the egg-laying organs. The birds should be housed in quarters facing the south, if possible, having no drafts, and so ventilated that there shall not be frost in the interior. they should have at least four square feet floor space, and six to eiches inches roosting space per bird.

In conclusion, would say that if the poultryman is familiar with the conditions which affect the egg pro duction, he will be able to answer for himself the question, "Why don't my hens lay?"

A. W. Richardson,
Instructor in Animal Industry, Poultry Division, Maine.

Housing Geese

Because geese are very hardy birds that is not sufficient excuse to neglect them so far as their housing arrangements are concerned. To achieve good results a comfortable shed should be provided for their accommodation. The house should be about 4 ft. high, and made of fairly thick boarding. If the timber is very thin the interior becomes too cold during the winter and too hot during the summer. The earth makes the best floor, as wood, cement, and bricks are all unsuitable and liable to lead to leg weakness. I have always found it a good plan to use a shed entirely, or almost, open in the front. If the house can be placed in a sheltered position no shutter is necessary, but if out in the open, exposed to the wind and rain, it is advisable to have one which can be opened or closed at will. The best plan is to have it hinged at the top so that during a driving rain it can remain partly open, yet at the same time afford protection. An abundant supply of fresh air is necessary, without which ill-health will make itself apparent among the birds. No overcrowding should be allowed, and as far as possible about 6 square feet of floor space should be given to each bird; that is, a house 6 ft. by 8 ft, accommodates eight adults.—Expert.

Cooling Eggs While Hatching

A very common mistake in artificial incubation is made with regard to the daily cooling of the eggs. It is seldom that operators allow sufficient time for this, which can only be accounted for by the fact that it is usually believed to be harmful. It must be remembered that an egg takes a long time to lose its heat, and therefore if only allowed to cool for a few minutes it has very little effect. Again, the length of time given must depend on the temperature of the room, for the eggs lose their heat more rapidly in a cold room than in a warm one. Taking the average temperature of 60 degs., the eggs should be cooled for twenty minutes in the morning and fifteen in the evening. The difference in length is suggested, for usually a longer time elapses between the night and morning cooling than between the morning and evening. If the temperature in the room is oly 50 degs., then fifteen minutes in the morning and twelve minutes in the evening is sufficient; if the room is only 40 degs., then twelve minutes and ten minutes is ample. If on the contrary, the room is 70 degs., twenty-five minutes should be allowed in the morning and twenty minutes at night, while if it be 80 degs., then thirty-five minutes and thirty minutes respectively should be allowed.—Expert.

Good harness deserves good care; keep the trimmings clean and bright with

Old Dutch

Renfrew Fire

On account of the wrong impression created by newspaper notices of the fire in the Plant of The Renfrew Machinery Co., Ltd., Renfrew, Ont., we are asked to announce to our readers that it was the Shell Plant only that was destroyed. The Standard Cream Separator Plant and the Scale Factory were not affected. Both these plants are working overtime, filling the Company's orders, and plans are being completed for the erection of a new Shell Factory.

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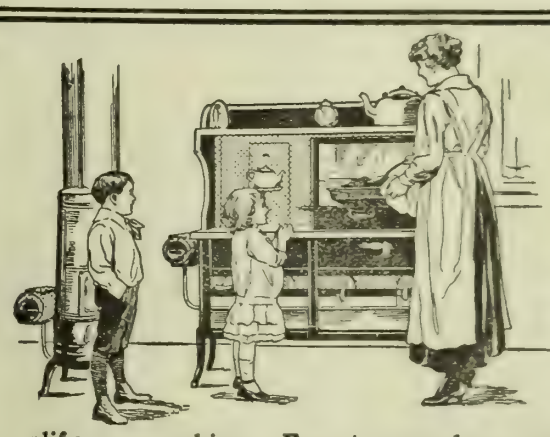

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Samantha Interviews Roosvelt

By Josiah Allen's Wife, in New England Farm and Home.

Josiah an' I have been to Mandy Jinerses on a tower. Bizness called Josiah to a neighborin' town, an' I beset him to go on a few milds further an' give me a chance to see Mandy. We went to school together an' we sot considerable store by each other.

Well, most the first thing that Mandy said to me after we passed the compliments an' interviewed each other about our two healths an' the queer weather we wuz havin', an' our different pardnerses whose acts we considered most as queer as the weather—she gin me the startlin' information that Theodore Roosevelt wuz goin' to speak there that night in the town hall.

An' I sez: "Why, Mandy Jiner, I take that as a plain dispensation! For months I've been wantin' to see that man, an' neighbor with him an' advise him for his good."

"Well," sez she, "I guss you won't have much chance to neighbor with him tonight; you won't see him only when he's on the rostrum."

"But," I sez, "if Fate has made up her mind that we shall meet, no ros trums is goin' to stand between us. I consider him one of the greatest men of our time, but like every other male man, he's liable to make mistakes." An' I sez furder: "For months an' months I've jest ached to labor with that man as a promiscuos adviser, an' I feel now the way is bein' made as plain to me as if a red carpet wuz bein' let down from the sky a-leadin' me to him."

"I don't see how you can talk with him," sez she; "there'll be more'n fifty people round him after the lecture, wantin' to shake hands an' talk with him. I d'no how you'll manage it."

"Neither do I," sez I, "there seems to be big lions in the way. But the lions will sneak off an' give me a chance at him, and you'll see they will. Old Fate hain't a-goin' to take me by the hand an' lead me toward him clear from Jonesville, an' then leggo—she will open up the way."

I sez this quite boldly an' firmly, but how it wuz goin' to take place I didn't know no more than a infant babe, but I laid holt of the horns on the altar of Faith with both hands, an' wuz determined to hang on, an' I felt that I should be led.

An' sure enough, it wazn't twenty minutes after that remark to Mandy Jiner, that a female friend of hern, a Mis' Gansey, whose husband kep' the only tavern in the place, come to call on her. An' when she hern of my strong desire to interview an' advise Theodore Roosevelt, she invited me to come over to her house to supper.

I guess she invited me out of curiosity some, as if I wuz a four-legged hen or a two-legged cow, from a remark she made to me later. I don't believe she invited me out of affection or any reverential feeling, or such as you would naturally thought she would have, a-witnessing such a great historical event as Samantha Allen advisin' Theodore Roosevelt for his good. She sez: "You'll have plenty of time to see him after he's eat supper."

An' I sez: "I'd ruther see him at that time than at any other, for vittles almays ameliorates a man's disposition an' makes him better natured. He's got a tegus job before him," sez I, "for I've got to make him see he's puttin' the wrong foot forward, an' I'm glad to have him take plenty of refreshment before I begin."

"He's a hard man to turn round," sez she; " he's so sot."

"I know it," sez I, "I'd ruther tackle twenty mules an' several drumedaries than this job Duty has sot up in front of me, an' I don't know how I'm goin' to come out with it, but I feel that I shall be led."

"Well, my trust wuz rewraced, the horns on the altar of Faith didn't give way under my holt an' I didn't leggo on 'em. But it all come round right, an' I got my opportunity as easy as fallin' off a log onto a bed of moss. Josiah had gone down town to get some necessaries Mandy wanted, an' I went home with Mis' Gansey, for it wuz drawin' nigh supper time an' I felt that I must be promp.

Well, the train come in as promp as I wuz. Theodore Roosevelt come in on the train an' most immegiately afterwards supper wux announced, for it bein' a small town folks still kep' the good old-fashioned way of eatin' dinner in the middle of the day, an' callin' the last meal of the day what it ort to be called an' what we have Bible proof for callin', supper. Hain't I got a picture hangin' up in my dinin' roomed named The Last Supper? I guess you never hearn any the old 'Postles callin' it the last dinner. No indeed! But I am maenderin' from the subject, an' to resoom backwards:

There wuz only a few folks in the dinin' room, an' Mr. Roosevelt set at the very next table to mine. Havin' made an exhaustive an' scientific study of man nater for so many years, I didn't say a word to him until after he had finished his supper, an' I wuz glad to see that his appetit wuz indeed good and the hulsome vittles disappeared rapidly. An' after he'd finished eatin' and sot back in his chair I advanced onto him an' held out my hand in a very friendly an' respectful way, an' sez:

"Theodore" (I had made up my mind to call him Theodore, jest as his ma probably used to call him when she wanted to deal with him); sez I, "Theodore, I call this one of the most wonderful and agreeable events of my hull life, to have the privilege of lookin' in your face an' takin' your hand an' neighborin' with you for a spell." By this time he had riz up an' had shooken my hand, an' I had introduced myself to him.

He smiled that genial, open hearted smile of hisen, so often reproduced in the papers. Why, if I had met that smile goin' round alone in the desert of Sarah without a chaperone, I should have reco'nized it an' liked it.

By this time the folks had all left the dinin' room, an' I sot down an' he bein' a perfect gentleman, did the same. He sot down an' folded his arms an' leaned back in his chair with a expression on his good-lookin' linement as if he wuz goin' to be resigned to anything that might happen to him.

Sez I the first thing after we wuz sot: "Theodore, I have always sot store by you, I've always considered you one of the greatest men of our nation and the world."

I paused here a minute to let that sentence strike him an' soak in an' let him look gratified at the compliment, which he did. He made a bow in acknowledgment on't an' smiled that agreeable well-known smile of hisen agin.

Sez I: "I've always kep' the eye of my spectacles on you from the time when a delicate, sickly lad you attackted ill-health with determination an' a cow pony, chasin' it over canyon an' prairie, an' conqqueqred it; I watched you tryin' to purify New York politics, a job that couldn't be did, but you done your best; I see you leavin' luxury an' ease at the call of your country an' Duty, I watched you stormin' up San Juan Hill chasin' the enemy an' comin' out ahead; I see you attackin' the rocky and nasty cliffs of politics an' political envy an' see you fool theme enemies and come out on the hights at Washington, D C. An' whilst there I watched you sendin' out the Doves of Peace to hover over foreign nations, leadin' 'em into their own realm of Peace; I see you attack entrenched evils; I see you workin' to make our great nation still greater by jinin' the waters of the Pacific an' the Atlantic.

"An' afterwards I see you victor over wild beasts, stormin' impenetrable forests an' discoverin' onknown waters, an' all the time through them strange events a-takin' such good an' faithful care of your wife an' fambly that the vultures of domestic scandal that are always layin' in wait to swoop down onto great people couldn't never come nigh you. I've watched your onward path, step by step, exultin' in every victory of yourn, jest as proud on you as if I wuz your own mother-in-law. You've gone on bravely an' undaintin'ly, puttin' the right foot forrerd from day to day, till, I am sorry to say it, Theodore, but I must—"

An' here I put on a lower, sadder axent an' a dejecteder an' meachiner look onto my linement, as I sez: "I have seen you a puttin' the wrong foot forred an' I feel as a promiscuous adviser and lifelong admirer of yourn, I had to help you draw that wrong foot back an' strike out boldly agin with the right one "

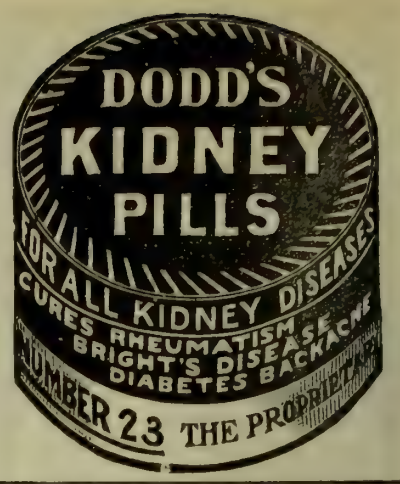
He looked down onto his boots with a pensive air an' looked deeply surprised, the broad, open-hearted smile faded some on his linement an' I knowed he felt hurt, but I had to go on:

Sez I: "A man with your intelleck an' world-wide influence, Theodore, must know that when you advocate wor you are helpin' to bring it on. The horror, the heart aches, the poverty, the unparalleled crime of men butchering their brother men, beating out the spark of God-given life that they can't give back—"

I see by his expressive face what he wuz thinkin' on, that the dignity of our Nation must be opheld at all hazards, an' I answered that thought of hisen.

I sez: "Theodore, you're not a woman. Mebby you hain't gin enough thought to it, but you belong to only one-half of the Nation, an' I feel that I have the right to represent the other half, though that right is disputed an' denied to us. An' speakin' for our half, I tell you that when wives an' mothers are bendin' over the mangled forms of them they love best, huddlin' starvin' children to their gant breasts, the rwod 'dignity' has little meanin' to them. An' afterwards, to a Nation ruined, impoverished, sot back in every way for centuries, the word 'dignity' won't look nigh so big nor so good as some other words in the dictionary—'Peace,' for instance, an' 'Plenty' an' 'Prosperity.'"

He sot kinder oneasy in his chair an' wiggled some, but I went on, for I had to: "I know you an' lots of other good an' great men feel that the men of America must not be cowards. But speakin' as I do from my half of the Nation to your half, I would ask you to answer honestly what is brave? Is it to ride away to kill men to the music of bugle an' drum, leaving wife an' mother an' children, helpless ones, to fight alone the gant wolves of Want and Agony? Or is it brave to refuse to desert the ones they swore to protect, because some big dignitary got angry with some other one, an' both call on the common people to settle that quar-



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Des Moines, Iowa.—"Four years ago I was very sick and my life was nearly spent. The doctors stated that I would never get well without an operation and that without it I would not live one year. My husband objected to any operation and got me some of Lydia E. Pinkham's Vegetable Compound. I took it and commenced to get better and am now well, am stout and able to do my own housework. I can recommend the Vegetable Compound to any woman who is sick and run down as a wonderful strength and health restorer. My husband says I would have been in my grave ere this if it had not been for your Vegetable Compound."—Mrs. BLANCHE JEFFERSON, 703 Lyon St., Des Moines, Iowa.

Before submitting to a surgical operation it is wise to try to build up the female system and cure its derangements with Lydia E. Pinkham's Vegetable Compound; it has saved many women from surgical operations.

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A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness, constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirefree and postpaid, also references Canadian ladies who gladly tell how Plymave regained health, strength, Fair, Giness by this method. Write Carey, Address: Mrs. M. Summers, Windsor, Ont.

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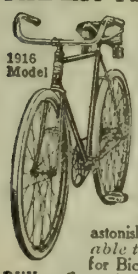

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Bulbs--50 High grade flowering bulbs, Gloxinias, Begonias, Oxalis, Gladiolas and other kinds also asparagus fern; all postpaid, 25c. Pine Tree Nursery, Pemaquid, Me.

Try an Ad in the FARMER

rel with their heart's blood, whilst they set back nursin' their 'dignity an' lookin' on?

"I know what you an' some other great men say, that being prepared for war will prevent our going into war. That's a great quqestion, Theodore. Some quqestions are so big an' have got so many sides to 'em, on 'em from every side with your very strongest spectacles, an' then you can't hardly decided about 'em. No doubt on the side you look at it, complete an' elaborate prepartions for war will help to avert war. But has it in the past? Has it stopped in Europe? Germany's worst enemy won't say she was not prepared for war. But did that prevent her from rushing into war? Or did it spur her onwards to show off her elaborate arms an' armaments? She naturally wanted to use what she had for so long a time prepared to use. You'll find that trait in every human bein'. An I tell you, Theodore, when folks fight ag'inst a trait deep intrenched in human nater, they are not to get left, an' you'll find that in human bein's from the cradle to the grave, an' I'll prove it to you.

He gin a deep sithe an' folded his arms more closely acrost his chist, an' leaned back furder in his chair with a resigned look onto his linement, an' I went on:

To begin with youth, when Johnny Smith got some brass things to wear over his knuckles to help him to hit harder in fightin', didn't he fairly ache to have a scrap with some other kid an' show 'em of' before fem? He didn't wait for any good excuse to fight, but jest pitched into Solomon Gowdey's little Nathan, an' wuz so proud of showin' off his superior preparations for war that he drawed blood an' had to be fairly pried offen him.

"An' Miss Ebenezer Meechum, when she got her new paror an' guest rooms built on, why, didn't she gave a party before the paint had mairly got dry? She didn't wait for company to send word they wuz comin'. She invited 'em, wantin' to show off her nice things. She had prepared for company an' wanted it. Billy Keyser wuzn't no more anxious to show off his elaborite an' splendid preparations for war than she wuz to show off her preparations for company."

At this juncter I see by his expressive linement that he didn't agree with me, an' knowin' that my kinder hung together, I brung up a man illustration.

Sez I: "Josiah got a new suit of clothes as I thought, so to be prepared in case of some extra occasion. But didn't he put them on the very next time he went to Jonesville? And I sez to him; 'What makes you wear them new clothes, Josiah? Why don't you wear your pepper an' salt suit?'

"'What did I get them clothes for?' sez he, 'I didn't git 'em to shet up an' look at, or to feel of 'em; I got 'em to use.'

"'I thought you got 'em to wear if anything happened.'"

"'Well, sunthin' has happened," sez he, "I'm goin' to Jonesville with the mare, an' I presume Deacon Gowdey will be there; he's always dressed better than I have; an' sort o' looked down on me, an' I'll shom him that I can dress better than he can.'

"There it was, Theodore—that trait shinin' out plain agin An' considerin' that you find that trait in every human bein', male an' female, child an' adult; an' seein' our Nation is made up of people an' wimmen, with that same trait in all on 'em, I've been afraid that Uncle Sam would act like Josiah, an' if he got more extravagantly an' elaborately prepared for war than other Nations, he might git bigheaded an' want to show off, and might step out with a chip on his shoulder an' act."

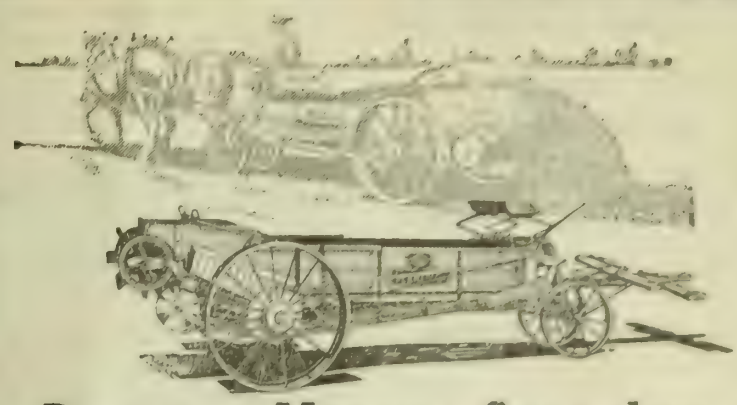
At that very minute a big-boneded man come a bustlin' in an' advanced onto Theodore, follered by seven or eight other men, the committee, so Miss Gansey said. They jest surrounded him, makin' profuse apoligies for not havin' met him, through some mistake, etc. They jest hid him from me an' hustled him off into another room, makin' excuses all the time as they feut. I d'nc as Theodore see the deep, respectful curchy I made him as I left the Presence.

But I sez to Miss Gansey, after he went out: ' What a man that is! How riz up his talk to me wuz! Sez I: "If I ever hearn true eloqquence. I hearn it to day from him. I didn't agree with him, but I wuz jest carried away with his beautiful talk."

"Why," sez she, "he never said one word! I wuz peakin' in all the time an' he never spoke one blessed word."

"I wuz dumbfoundered and couldn't believe her. "Impossible!" sez I. "Why, didn't he bring up all them arguments of hisen, an' didn't I argy an' convert him, I hope?"

Josiah had come in onbeknown to me, an' he jined right in with Miss Gansey. Sez he: "I sot back there by the door all the time, an' I can take my oath that he never said one livin' word, not one! An' good reason, too, you didn't give him a chance. He opened his mouth once or twice to speak, but you went right on an' drownded him out, jest as females always will, if you give 'em a chance." An' he went on: "I'll bet it wuz the



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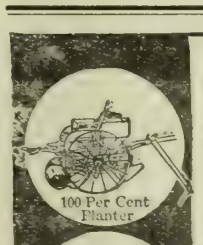

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IRON AGE

potato machines but have room here for one only. **Potato Planters** put one piece in every space and only one. Isn't it better to plant that way? Space every foot of ground count and none of the rest of the work wasted? Sow one or two bushels of seed on every acre. Sold with [illegible] *Row Sprayers* (also one with [illegible]) and *Ridgers*. Also makers of famous [illegible] for each line. Send **Free** to [illegible] are interested. How many acres [illegible]

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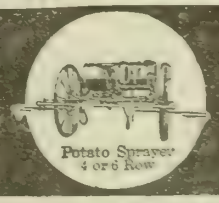

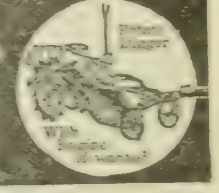

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Mrs. Ernest Adams, Sault Ste. Marie, Ont., writes: "My little girl, six years old, had a dreadful hard cough. At nights she would cough so hard she would get black in the face, and would cough for several hours before she could stop. We tried different kinds of medicines and had several doctors, but failed to do her any good. She could not sleep nor eat her cough was so bad, and she was simply wasting away. A friend advised me to try Dr. Wood's Norway Pine Syrup. I got a bottle and saw an improvement, and got another. Now I am only too glad to recommend it to all mothers."

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Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

first time Roosevelt wuz ever kep' from talkin' when he wanted to!"

An' for all Josiah's cricketsizin' me and pokin' fun at me, "I'll be fizzled if he didn't act kinder proud on't."

An' sez Miss Gansey (she wuz jealous on me, because I had talked to Roosevelt an' she hadn't): "I presoom he never hearn a word you said. I dare say he wuz restin', an' kinder turnin' over his evenin' lecture in his mind, an' didn't pay no more attention to what you wuz sayin' than if you wuz a muskeeter a buzzin' round his head."

What spiteful things a envious female can say! I wuz never compared to a muskeeter before. But envy wuz what riled her.

Making Our Home Surroundings Cheerful.

"There's not a leaf upon the tree,
There's no blue shred to grace the sky,
Yet some glad spirit whispers me,
The Spring is nigh."

Yes we feel it in every thing. Everything points to thelong-looked-for spring. The dropping leaves tell us that old Sol is getting back his strength, and must make things move.

The sheep take their daily walk, to some sun warmed knoll, where they can taste mother earth again. Birds are twitering to each other among the vines as they make their plans for the nest building, and rearing their tiny brood. In doors the sun shines farther and longer, and the house plants smile back their gratitude by putting out new shoots and blossoms.

Some fairy wand has touched and changed things in a twinkling, but everything under ground and over land learns it before we do. Every root must have felt it, and every bud unconsciously bursts. The birds we know not how—know when to come back to us after wintering in the South, and welcomed by all, is the first robin red breast.

The fish in the depths of the sea, by some unaccountable knowledge, come to the mouths of the rivers, ready to dart up the streams later. The bees and bugs, and all the little creatures that roll and go to sleep, wake up with the coming of spring.

The children gather on the first bare patch of ground. The call comes "Mother find me a ball," then we know for sure that spring is here.

All winter we have been living over our last summer's garden and planning for the next one. The seed catalogues are coming with every mail, and we can hardly wait. December 26th we picked the last boquet—a bunch of mixed stock. The perfume was gone, but the colors bright as in July. Then the snow storms came and there were no more boquets. Still we have had flowers all winter.

A few bulbs planted in October and November and left in the dark to form roots for six or eight weeks, will give a continuous bloom that will brighten your homes, and gladden your hearts all through the dreary winter months. Our collection consisted of a Chinese Sacred Lily, a variety of hyacinths, tulips, narcissus and daffodils, and we have had a succesion of bloom for a few cents.

Our Women's Institute has taken a decided interest in the school garden movement. Last year a very nice garden was the result of some work and considerable talking along this line in our district, while in the adjoining district the home plots were taken up, as the school grounds were not suitable for cultivation. In both cases it proved a success with greater enthusiasm for another year.

Such a movement is catching, especially among children, and this year we expect to see the number of plots doubled.

Many of the flower seeds used were supplied by the institute, and as an education along the lines of the beautiful bulbs for winter blooming were given to the school children. These have proved a great delight to children and parents.

This is but the beginning of what we hope will be carried on by every institute, till all over our province will be felt the uplifting influence of summer and winter flowers.

Manitoba Women Sends Message

TELLS SUFFERING WOMEN TO USE DODD'S KIDNEY PILLS

Mrs. F J. Garlis, Who Suffered With Backache, Says That the Results She Got From Dodd's Kidney Pills Were Wonderful.

Stewart Valley, Sask., April 18 (Special.)—Mrs. F. J. Garlis, wife of an estimable resident of this place, is enthusiastic in her praises of Dodd's Kidney Pills.

"Dodd's Kidney Pills have helped me wonderfully," Mrs. Garlis says in an interview. "A year ago I was so bad with my back I could hardly move. I took four boxes of Dodd's Kidney Pills and they helped me more than I can tell you."

Mrs. Garlis is now able to attend to her household duties as well as nurse her fine big baby boy and she feels that she cannot recommen Dodd's Kidney Pills too highly.

Backache is the bane of the average woman's life. It is accompanied by a weakness and lassitude that makes life a burden. But thousands of women all over Canada are telling their suffering sisters that relief and cure is to be found in Dodd's Kidney Pills. They cure the kidneys and nine-tenths of women's ills come from diseased or disordered kidneys.

B. B. Genuine White Lead links up B. H. "ENGLISH" PAINT with a supremacy record of nearly two centuries.

LINKS IN THE B. B. AND B. H. CHAIN

1729 saw the founding of the firm of Brandram Bros., the inventors of the Brandram Process of corroding White Lead,—a process that produces a lead that has been the standard White Lead of the world ever since.

In **1906** after handling Brandram's White Lead for many years, in the Canadian market, the firm of Brandram-Henderson purchased the Brandram Bros. formulae and exclusive rights to manufacture it in Canada.

In **1909** the final link was forged when the firm decided to use B. B. Genuine White Lead in the manufacture of their B. H. "ENGLISH PAINT and after practical tests and most careful research arrived at an exact formula guaranteed on every can under the President's signature. Thus was the chain completed.

The B. H. "ENGLISH" PAINT formula of 70 units of Brandram's B. B. Genuine White Lead and 30 units of pure White Zinc, in all tints and white with its ironclad guarantee, makes B. H. "ENGLISH" PAINT the Quality-Service-Paint of Canada.

BRANDRAM HENDERSON
Montreal Halifax St. John Toronto Winnipeg

Link up Your Paint needs with B.H. "English" Paint.

I have just been reading the children's magazine "The Schoolmate," started just a year ago, under the supervision of John Lewis, Child's Floral Park, N.Y., and edited by Mrs. Caroline Childs. It is a paper every child should read, being full of nature study. Its articles are by the best authors and certainly educative in the right direction. It only costs 25 cents in single copies, and 10 cents to clubs of twenty.

Mr. Childs seems to be one of those big hearted men who having a good thing wishes to pass it on—and is has a list of flower, vegetable seeds and blubs so low priced to school children that the poorest child can have them. Thousands of children are taking advantage of his generosity, and thus helping him to spread his great flower garden all over North America.

I was much impressed with a sketch of the national plant, flower and fruit guild started by a little slum child in N. Y., asking Mrs. John Wood Stewart—who was carrying a large boquet of wild flowers she had gathered in the country—for a flower. The earnest, wistful face of the child so attracted the lady that she immediately gave her a rose. Mrs. Stewart's sympathies were aroused as she thought of the thousands of just such children in the cities who never smell a flower, and for many days she thought of how the waste blooms of the country might be carried to the poor of the cities.

After a long conference with other women, Mrs. Stewart visited the presidents of six express companies, and found them ready to co-operate with any schemes by which the waste of the country might meet the wants of the city—and so the Free Label was born. It is a bright yellow label, and bears the words "Approved Label."

In its first year the label carried free, two thousand bunches of flowers. In 1914 in New York city alone it carried 295,942 bunches of flowers, 485 bushels of fruit and vegetables, 1932 glasses of jelly, and more than 5000 potted plants and bulbs. In its twenty years existence this magic label has carried six millions of flowers to the sick poor of the big city, and thousands of bushels of fruit and vegetables that otherwise would have decayed on the ground. A fee of one dollar per member pays for printing the labels.

Is this not an idea for our Institute workers, even if we do steal it from our friends across the border?—A. M. S., P.E.I. Women's Institute.

"Look for the Paroid Roll"

The Least Expensive Roofing in the World

A WEATHER-PROOF, fire-resisting roof is the only roof worth laying. You cannot afford any other kind of roof—the danger of damage to your stock is too great, the cost of repairs in time and money burdensome.

Back of every roll of the Genuine Paroid Roofing is a record of 18 years' hard service under the most trying conditions, on farm buildings, factories and railroad buildings.

NEPONSET Paroid ROOFING

Hundreds of Paroid Roofs laid 18 years ago are in perfect condition to-day. Paroid is proof against raging gales, beating rain storms, free ing winters, melting snows, the burning summer sun—the most severe conditions serve but to show just how good a Paroid Roof really is. Paroid is less expensive than shingles, lasts longer and is far better protection from fire.

Look for the Paroid Roll

By it you will know one of the 2,000 Neponset dealers in Canada.

Paroid is made in three colors—Grey, Green and Red.

Send for free booklet, Repairing and Building."

Neponset Wall Board

For Walls, Ceilings and Partitions, in place of lath, plaster and lumber. A Tough board nearly one-quarter of an inch thick, finished ready for use, in Cream White and Quartered Oak patterns. Cream White finish can be painted if desired.

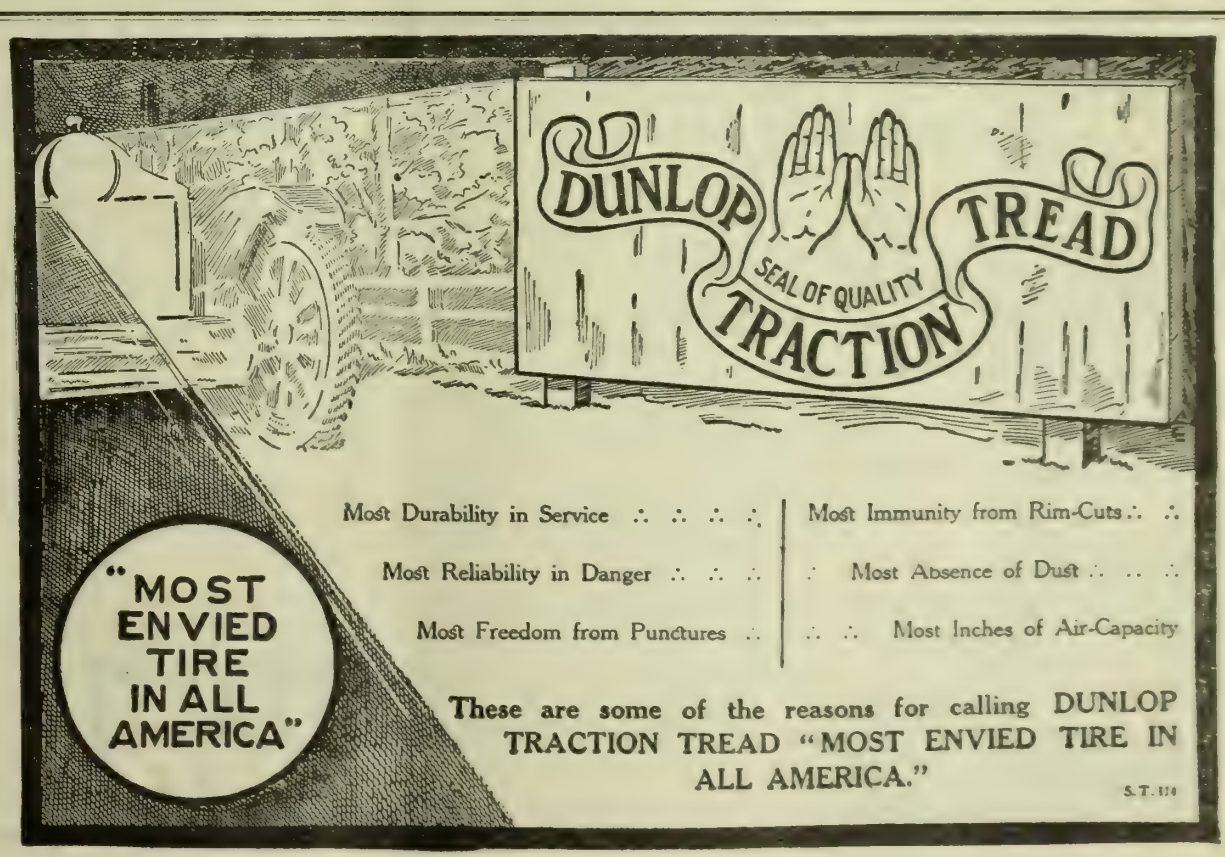
BIRD & SON, DEPT. M,
70 KING STREET, HAMILTON, ONTARIO.
Warehouses: Winnipeg, Calgary, Vancouver, Montreal, Halifax, St. John, Edmonton.
The Largest Manufacturers of Roofings, Wall Board and Roofing Felts in Canada.

To Make Colors Fast.

To preserve the colors of ginghams, printed tawns, &c., and before washing almost any colored fabrics it is recommended to soak them for some time in water to every gallon of which is added a spoonful of ox gall. A strong, clear tea of common hay will preserve the color of French linens. Vinegar in the rinsing water for pink and green fabrics will brighten these colors, and soda answers the same purpose for both purple and blue. The colors of the above fabrics may be preserved by using a strong, milk-warm lather of white soap, putting the dress into it instead of rubbing it on the material and stirring into a fast and second tub of rinsing water a large tablespoonful of ox gall. To prepare ox gall for washing colored articles, empty it into a bottle, put it it a handful of salt, and keep it closely corked. A teacupful to five gallons of the rinsing water will suffice.

Housework as Physical Culture.

There is nothing like housework for physical culture. In the various complex movements performed by the different sets of muscles during the innumerable evolutions incidental to housework, we have an admirable system of gymnastics peculiarly adapted to the needs of women. A certain amount of exercise which arouses and interests the mental faculties, while occupying the activities of the bodily organs is necessary to health and housework undoubtedly complies with both of those conditions. In many a household the daughters take their share of the lighter branches of the work, but in many another establishment dusting is considered undignified, polishing plebeian, and bed-making a bore, and so the womenfolk leave the work to hired hands, while they amuse themselves at so-called physical culture classes, where perhaps, they beat the air with Indian clubs, a form of exercise considered more dignified, if less useful, than beating carpets with rattan canes.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SEAL OF QUALITY
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"MOST ENVIED TIRE IN ALL AMERICA"
Most Durability in Service
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Most Freedom from Punctures
Most Immunity from Rim-Cuts
Most Absence of Dust
Most Inches of Air-Capacity
These are some of the reasons for calling DUNLOP TRACTION TREAD "MOST ENVIED TIRE IN ALL AMERICA."
S.T. 110

Heart Was So Weak Could Not Go Up Stairs Without Help.

When the heart becomes weak and does not do its work properly the nerves become unstrung and the whole system seems to go "all to pieces."

When this happens you need a tonic to build up both the heart and nerves, and Milburn's Heart and Nerve Pills will accomplish this for you, providing you to not let your case run too long and allow it to become chronic.

Mrs. Evangiliste Loverdure, Fort Coulonge, Que., writes: "Last summer my heart and nerves were so bad I could not sleep at night, and my heart was so weak I could not go up stairs without help. My doctor said he could do no more for me as my heart was completely done. A cousin of mine came in one day and told me that Milburn's Heart and Nerve Pills cured her completely. I immediately gave her 50 cents to bring me a box, and since that day there is a box always on my sideboard. I am now well, and my heart and nerves are stronger than when I was a little school girl. I advise anyone with heart trouble to try them. No doctor can beat them."

Milburn's Heart and Nerve Pills are 50c per box, 3 boxes for $1.25; for sale at all dealers; mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

HAWK BICYCLES

An up-to-date High Grade Bicycle fitted with *Roller Chain, New Departure or Hercules Coaster Brake and Hubs, Detachable Tires*, high grade equipment, including Mud-guards, Pump, & Tools **$22.50**

Send for **FREE 1916 Catalogue,** 60 pages of *Bicycles, Sundries and Repair Material.* You can buy your supplies from us at Wholesale Prices.

T. W. BOYD & SON,
27 Notre Dame St. West, Montreal.

PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited.

The Prevention of Typhoid Fever.

Issued by the Department of the Public Health, Nova Scotia.

As the season in which typhoid fever is usually most prevalent is approaching, a reference to this disease is appropriate. Last summer a press bulletin issued by this Department stated that typhoid was relatively less prevalent in Nova Scotia than in most countries in the North American Continent, but unfortunately the statistims for 1914 show that there were fifty per cent more deaths from this disease in our Province last year than during either of the three immediately preceding years. As typhoid is a disease which is usually communicated from individual to individual, its exceptional prevalence last year should warn us of the need for taking especial precautions this summer.

The germ which causes typhoid is given off by the discharges of those who are ill of or convalescent from the disease. Sometimes it persists in the discharges for many years, in those who are termed "typhoid carriers." Such carriers have been responsible for many localized epidemics. The celebrated "Typhoid Mary," a not very cleanly cook has been the cause of so many of these epidemics that she is now being kept in detention by the New York City Depart ment of Health.

The typhoid germ is usually taken into the body with food and water. It gains access to water because of careless disposal of the excreta of typhoid patients. Flies are frequently responsible for carrying the infection from such excreta, or from the sick room, to food. Those who are caring for typhoid patients, and those who have had the disease and are "carriers," may infect food if they are not particular about cleansing their hands before preparing or handling food.

The spread of the disease is to be prevented by carefully disinfecting all discharges and the soiled clothing of typhoid patients, by thorough cleanliness on the part of those who nurse or care for such patients, and by the proper protection of all foodstuffs against contamination by flies, dust, etc. Dealers and caterers who do not protect their wares against flies and dust should not be patronized. Water from any suspicious source should be boiled before use, and a similar precaution is advisable in the case of milk.

Vaccination against typhoid has proved so successful that it is to be strongly advised when one lives in or must go to a community in which tyhoid exists.

The Department of Public Health, Nova Scotia, issues a leaflet containing instructions for those who have to minister to typhoid patients, which may be obtained free upon application to the Provincial Health Officer, Halifax, or to any Medical Officer in the Province.

How to Build a Gown by Commercial Patterns.

"In using the commercial pattern," says Miss Beryl Dixon, Colorado Agricultural College, Fort Collins, "first of all be sure that all directions on the envelope are understood. Notice whether or not seams are allowed. Notice also the marks indicatin folds and legthwise threads.

"Next hold the pieces of the pattern up to the person for whom the garment is intended. If the skirt is too long, lay a tuck in the pattern midway between the hip line and the bottom of the skirt. If it is too short, cut across the pattern in the same place and insert a piece of paper. The waist should be corrected in the same way, the change usually being made half way between the lowest point in the arm hole and the waist line. The sleeve should be corrected both above and below the elbow, half of the difference being taken out in each place.

"All parts of the pattern should be placed on the material before any one piece is cut. Notice right and wrong sides of material and ups and downs if there be any. Pin in place using pins at right angles to edge of pattern as this makes tracing easier.

"Cut around the outline of the pattern. Trace seam allowances and notches showing how pieces go together. Never cut notches, as this

TO-DAY AND EVERYDAY

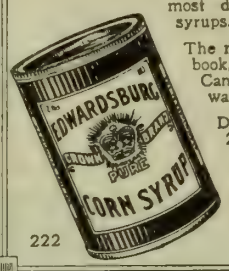
You'll Like the Flavor

40c, 45c, 50c per pound

Let Him Help Himself To CROWN BRAND CORN SYRUP

IT will do more than satisfy his craving for "something sweet"—it will supply the food elements needed to build up his little body and help him to gain in health and strength.

"Crown Brand" is a wholesome, nourishing food—as well as the most delicious of table syrups.



The recipes in our new book, "Desserts and Candies", will tell you just how to use it, in many novel ways. Write for a copy to our Montreal Office.

Dealers everywhere have "Crown Brand" in 2, 5, 10 and 20 pound tins—and 3 pound glass jars.

THE CANADA STARCH CO. LIMITED
MONTREAL, CARDINAL, BRANTFORD, FORT WILLIAM.

Makers of "Lily White" Corn Syrup, Benson's Corn Starch and "Silver Gloss" Laundry Starch.

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WILSON'S ARE GOOD SCALES

$5.00 only

Will bring this Scale FREE to your Station

Easy Terms to Pay Balance

The WILSON SCALE 2000 pounds heavy wheels, drop lever and 16 Diamond Steel Bearings that are guaranteed for 20 years against wear or breakage.

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Prompt Returns Market Prices
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spoils the seam in case alteration must be made. If the material will not show tracings, tailor tacks may be used for amrking.

Medicine Chest Valuable Adjunct to any Home.

"There was a time when the average woman depended almost entirely upon drugs for the treatment of disease. Although science has made many advances, drugs are less depended upon, than sanitary measures and a knowledge of hygience," writes Miss Alice J. Barnard, of the Colorado Agricultural College, Fort Collins. "Every woman may make herself familiar with the facts essential to her usefulness in the sick room by reading and observation. She needs to have a speaking acquaintance with some of the more common accidents and ills, together with a knowledge of their prevention, intervention and cure.

"A simple medicine chest, inexpensively equipped, may prove a valuable edition to any home, especially when the doctor and the drug store are far away.

"It is not always necessary to have an expensive cabinet. A plain box about 20 inches long, 14 inches wide and 6 inches deep, or even a spool box, may be used. It should be varnished on the outside with oak stain, on the inside with white enamel. If two shelves were arranged propertionately across the width, sufficient space would be allowed for the bottles and utensile. The case should be placed in a well lighted, convenient place and at good height.

"The bottles containing poison should not only be well labeled and out of reach of children, but they should have rough surfaces, in order that no mistake may be made in giving medicine."

How to care for your Linoleum.

Alkaline Cleansing Agents and Hot Water Should Not Be Used.

Linoleum is made of linseed oil, rosin, and ground cork, with mineral coloring matters. In cleansing and renovating linoleum, the above ingredients should be taken into account. Therefore, linoleum should not be washed with soap, soda or other alkaline cleansing agent. Neither should hot water be used on it.

To clean linoleum properly, it should be first swept gently, then wiped up with a damp cloth. The surface should be treated every two or three months with some good floor wax, well rubbed in. A solution that may be used to preserve and renovate linoleum is the following: Dissolve two and one-half pounds paraffin in one gallon of oil of turpentine, using gentle heat; apply while warm with a piece of flannel; let remain on the linoleum about twenty-four hours, then polish with flannel.

New linoleum should be warmed before unrolling or bending, as it cracks very easily when cold. Furniture should not be rolled or skidded over linoleum, but lifted and carried. Small blocks of wood or scraps of linoleum placed under furniture casters prevent unsightly denting.

The greatest amount of wear on linoleum comes, naturally, from walking over it. Plain linoleum shows such wear much less than figured, which often becomes unsigthly from "paths" and worn patches. This is especially true of the cheaper printed linoleums. When properly laid and cared for, however, the very best inlaid linoleums are quite satisfactory, and are the cheapest in the long run.—C. E. Vail, Colorado Agricultural College, Fort Collins, Colorado.

RENNIES SEEDS

EVERYTHING NEW
FRESH—PURE
RELIABLE

Ask your dealer or write
RENNIE'S — MONTREAL
ALSO AT
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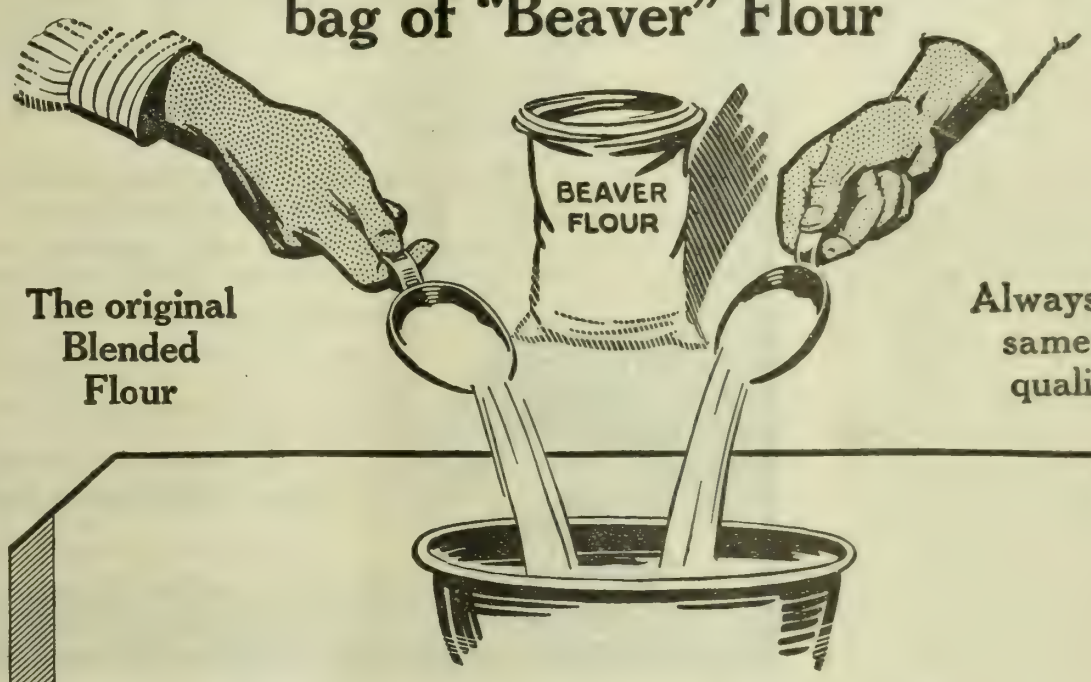
Here's your Bread Flour and your Pastry Flour, both from the same bag of "Beaver" Flour



The original Blended Flour

Always the same in quality

THE only flour that can make perfect Bread and perfect Pastry, is that flour which has the delightful flavor, the whiteness and lightness, of Ontario wheat flour with the strength of western wheat.

"Beaver" Flour has this perfect balance. It contains the quality, flavor, lightness and whiteness of the choicest Ontario wheat—and its strength is increased by the addition of Manitoba wheat.

By blending these two wheats in exact proportions, "Beaver" Flour gives you the best qualities of both—and is equally good for Bread, Rolls and Biscuits, Cake, Pies and Pastry.

Don't go to the trouble of keeping two flours in the house. Get "Beaver" Flour—the bread and pastry flour—the original blended flour.

DEALERS—Write us for prices on Feed, Coarse Grains and Cereals.

THE T. H. TAYLOR CO. LIMITED, CHATHAM, Ont. 161

Varaties of Potatoes Suited to N. B.

(Continued from Page 450.)

ably. The Prolific was somewhat rougher than the others, but a great yielder, and the quality was quite equal to the others named. This group differs but little from the Green Mountain group, except that the shape is apt to be more irregular and the sprouts start with a bluish tinge instead of being perfectly white, as with the Green Mountains.

There are other distinctive types and varieties, such as deep red-skinned potatoes, of which a variety called Dakota Red or Susy was considerably grown in New Brunswick years ago. They were heavy yielders, free from disease, rather rough and deep-eyed, but were wonderful potatoes to keep in the cellar, coming out in May and June as firm as they went in. There was also a potato known as the California or Jenny Lind, which was an enormous cropper, but a long rough tuber and not fit for table purposes. A somewhat similar potato is the Chenango, grown on Prince Edward Island. A black potato, round and rough, a large yielder with very deep eyes called Markee, which was a long keeper like the Dakota Red, but of excellent quality, was also extensively grown and was a good spring seller in the St. John market.

Several dark and purple skinned potatoes are grown and are sold locally. In York county a long, somewhat rough potato of dark skin, is called the McCullough. I understand that much the same sort of potato is called McIntyre in parts of Carleton and Victoria counties. On Prince Edward Island the McIntyre is a round, dark-skinned potato of great vigor and especially disease resistant. The king of all potatoes on the St. John market and among potato epicures, anywhere it can be procured is the Black Kidney. It has been rather a hard potato to grow, except in a few restricted localities and by only some men there.

The New Brunswick grower who made the greatest success and some money in growing this variety, was Felix McGarr, Burton, Sunbury County. Mr. McGarr has told me that he found it necessary to keep up his stock by breeding over, every few years through the blossom. Mr. McGarr sold his farm three years ago, so his work is discontinued, but some of his neighbors are still growing Black Kidneys and getting good crops.

I do not pretend that this paper deals thoroughly with this question of varities. There are various types which I have not mentioned at all, and there are hundreds not worth considering. It is the desire of the Experimental Farms system to do what it can along the line of potato improvement, the testing of varieties, methods of growing, etc., and I hope that when, in the near future, we have plenty of clean land available at the Fredericton Station, we will be able to extend our work and obtain results and information of some value to our potato growers.—Address at the New Brunswick Potato Growers' Convention.

Potato Improvement and Seed Collection.

(Continued from page 451.)

time of tuber formation—has a greater effect on the vitality of the tuber than a check during its later development.

It might be of interest for me to mention my experience at Macdonald College where we grew about 20 acres of potatoes for use at the College. I found it impossible to secure a profitable crop without importing New Brunswick seed each year. The summers were hot, and very dry, which condition it seems brings about a tuber development lacking in vitality. The crop looked good for seed, but when planted alongside imported seed it would not produce a crop by one-third as good, and the second year was about worthless. Thus a potato tuber may be so weakened in vitality in one season as to be worthless for profitable crop production under certain soil conditions. The Macdonald College soil is a favorable one for Rhizoctonia, and in the fall at digging time the tubers were covered with the black spots indicating the presence of this disease.

Here again then were conditions that were successfully combatted only by using seed from sections where tubers of high vitality were produced. The soil was so impregnated with the disease that treating the tubers was of no value. The low vitality in the tuber grown from imported seed was without doubt largely due to the heat and absence of moisture rather than rhizoctonia, although this was a factor as well, but the crop from these tubers the following year was a failure primarily because the sprouts of the tubers were not sufficiently vigorous to resist the rhizoctonia fungus.

No amount of selection work—and

These Buildings are Painted with MARTIN-SENOUR PAINT
New Field Husbandry Building Ontario Agricultural College, Guelph.
Barns at the Ontario Agricultural College, Guelph.

FARMERS

Consider *Purity* in *Paint* in *Preference* to Price.

You wouldn't pay the regular price for Sugar that analyzed 10% of sand. You wouldn't pay "all wool" prices for cotton-and-wool clothing. Why should you pay your good money for impure Paint, when you can get

MARTIN-SENOUR "100% PURE" PAINT

We guarantee Martin-Senour "100% Pure" Paint (except a few dark shades that cannot be prepared from pure Lead and Zinc alone) to be *100% pure* White Lead, pure Oxide of Zinc, pure Linseed Oil, pure Colors and Turpentine Dryer; and to be entirely free from adulteration or substitution; and sold subject to chemical analysis.

Every experienced Painter knows that the above formula is right. It is the standard of the paint world.

You get absolute purity — extreme fineness — uniform quality—when you insist on "100% Pure" Paint.

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SENOUR'S FLOOR PAINT The old reliable.
RED SCHOOL HOUSE PAINT for the barn and sheds
MARTIN-SENOUR WAGON and IMPLEMENT PAINT for wagons, tools, etc.

We'll send you, free, "Farmer's Color Set" and our fine book, "Town and Country Homes", if you write for the name of our nearest dealer-agent.

ADDRESS ALL ENQUIRIES TO
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655 Drolet Street, Montreal. 75

Spraying Pays

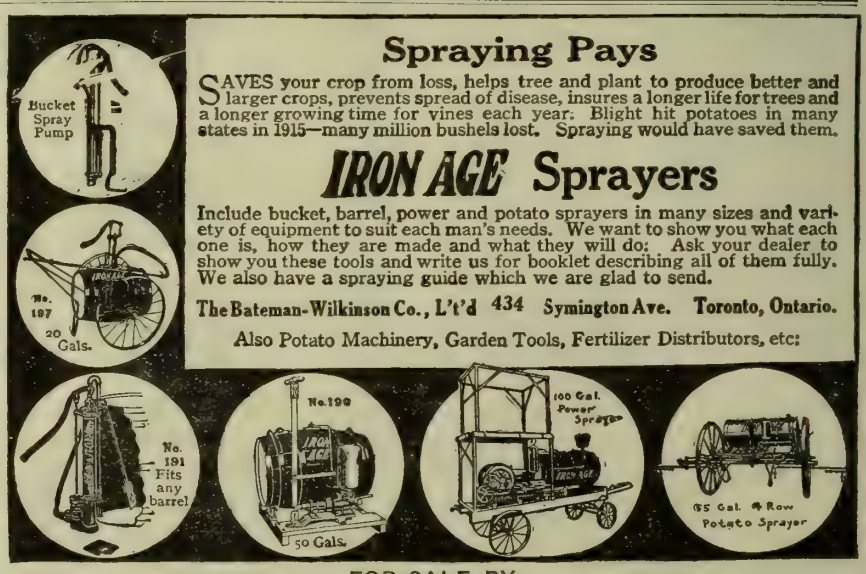
SAVES your crop from loss, helps tree and plant to produce better and larger crops, prevents spread of disease, insures a longer life for trees and a longer growing time for vines each year. Blight hit potatoes in many states in 1915—many million bushels lost. Spraying would have saved them.

IRON AGE Sprayers

Include bucket, barrel, power and potato sprayers in many sizes and variety of equipment to suit each man's needs. We want to show you what each one is, how they are made and what they will do. Ask your dealer to show you these tools and write us for booklet describing all of them fully. We also have a spraying guide which we are glad to send.

The Bateman-Wilkinson Co., L't'd 434 Symington Ave. Toronto, Ontario.

Also Potato Machinery, Garden Tools, Fertilizer Distributors, etc.



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THE LOUNSBURY CO. - - - - - - - - - - NEWCASTLE, N.B.
BLIGH & PRINCE - - - - - - - - - - - - TRURO, N.S.

we did such work for four years—ever gave us results that compared at all favorably with imported stock, and this leads me to believe that in very many cases potato growers must depend upon stock from sections where climatic and soil conditions are entirely favorable for the crop.

I mention this disease for the purpose of pointing out what factors may combine to reduce yield and to indicate the importance of high vitality in resisting certain unfavorable conditions. I do not do so for the purpose of placing this disease before you as the only one which may cause a distinct loss in the lessening of vitality. This disease may not be a factor at all with many of you, but it certainly is a disease that is not receiving the attention it should at the hands of our plant disease investigators.

Disease ns not the only factor that may bring about lessened vitality. In fact, as already pointed out the lack of vitality may be due to heat, drought, or excessive moisture, and these are influenced by climatic conditions, kind of soil and method of soil management.

Unfavorable conditions during growth must necessarily weaken the vitality of the potato, and the wise grower is the man who selects from his best fields where normal growth has been made, or if his neighbor has produced better crops makes his selection from his field.

To illustrate we will assume that the numbers in this table represents individual farms, where would you go for seed stock? You certainly would go to either farm No. 1, 3, 4 or 7. Here then is where I think potato improvement should start. What is the good sense in farmers No. 5, 6, 8 and 2 doing hill selection work when they could go to farmers No. 1, 3 4, or 7 and get probably better seed stock than they cuold get by selection from their field in probably five years and in the meantime be growing poorer crops while working up their production. My experience at Macdonald College shows quite conclusively that selection work under such conditions is an absolute waste of time, and that tubers from any unselected lot of potatoes from sections where this crop has better climatic conditions for their development proved superior by over one-half to the best selected stock we could produce.

Potatoes grown in New Brunswick are as a general rule of strong vitality, but even here it is quite possible you will find a vast difference in the vigor of the same variety in different farms. Would it not be possible for farmers to organize in certain sections for the purpose of growing under the same conditions seed from the different farms in the section? If this is done and the seed of strongest vitality determined it would serve as a basis for future effective selection work to low vitality in his seed stock. My experience leads me to believe that there is as much difference between the same variety from different varieties grown under similar conditions. We should therefore before starting selection work round up the groups of strongest vitality and use these for selection work.

I am in favor of hill selection with good stock to start with but it seems to me it will be better for all concerned to place hill selection work in the hands of certain ones rather than for each to attempt to do the work himself. I am convinced that there is more difference in the product from different fields than there will be from selected and unselected hills in the same field. I can see no good reason why the individuals of a community should not co-operate to the extent of using for seed stock the best potatoes in that community, and after the best sotck of the community is determined stock from different communities could be compared. If I know that my seed stock is 10 per cent lower in vitality than my neighbors I certainly am likely to get my seed stock from my neighbor. Furthermore, if we hope to build up a seed potato trade, which I have always maintained this Province is eminently suited for, we must adopt some such system rather than that every one in the community should grow indiscriminately whatever may in his opinion suit him best without considering the community interest as a whole.

By selection from the strongest and best yielding hills at digging time we are reasonably sure of improving the stock. This enables us to reject plants which for one reason or another has not done as well as others. This involves some extra work which must be done by hand, and while it is not necessary that large amounts be selected, as this is to serve only as foundation stock from which to grow the general stock for planting, it is necessary that care be taken to select hills of uniform tubers true to type of strong vitality, and productive.—Prof. W. S. Blair at the New Brunswick Potato Growers' Convention.

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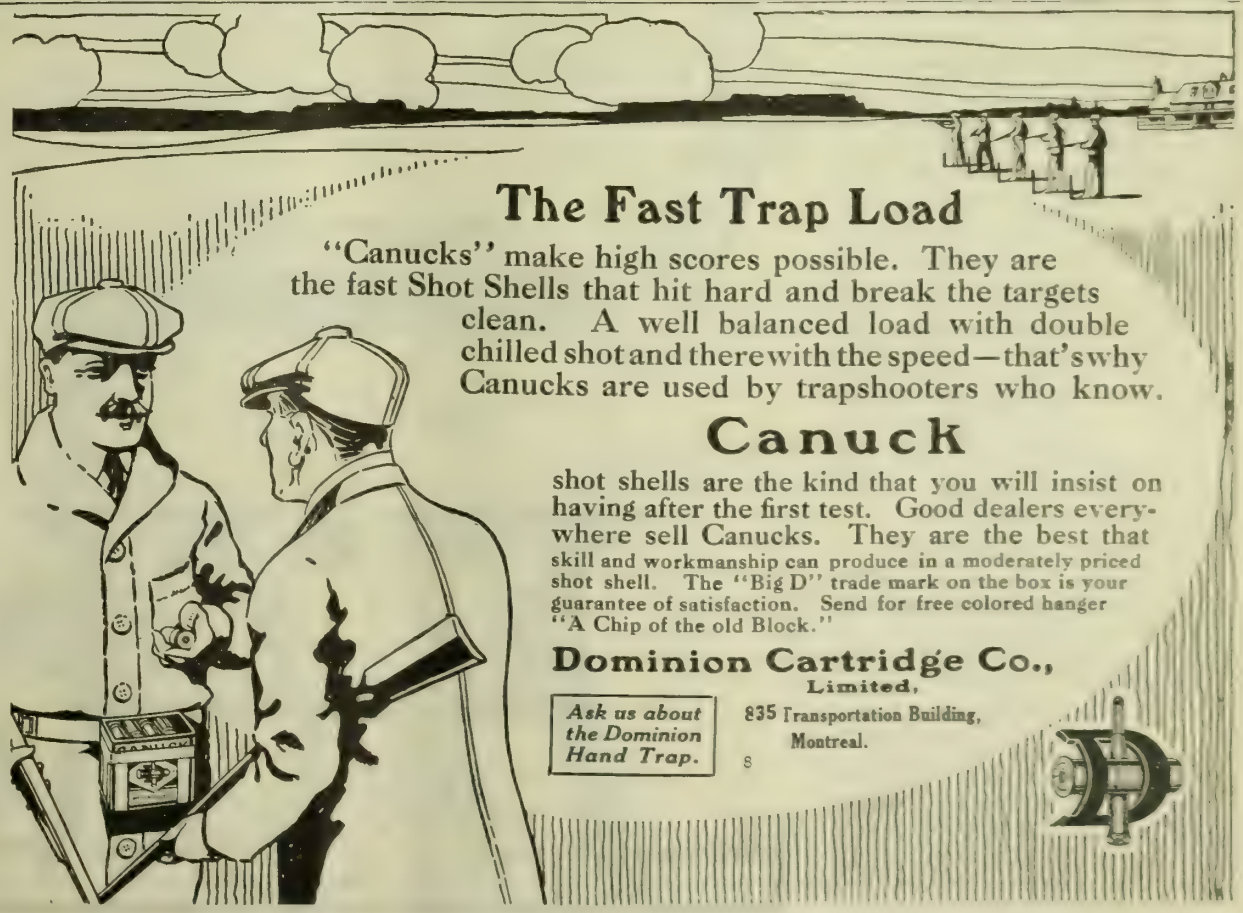

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8

Stable Notes.

(Continued from Page 461.)

soft soap and warm water are employed—the circulation, which has been excited by the warm water, becoming suddenly checked by the effects of cold air and the wet coat, and the vessels become congested and superficial inflammation follows. A good deal might be said generally about the disadvantage of light colors in horses, especially those that fade towards the extremities, but enough, perhaps, has been said to show the dangerous tendency of making utility a secondary consideration when show points are in question.

Rations for the Entire Cart Horse.

It is always a difficult matter to prescribe exact rations, even for individual working horses the character and amount of whose labor can only be approximately stated. For the management and feeding of stallions kept wholly or in part for service purposes there can be no exact formula. The constitution and individual requirements of the horse, difference in country and climate, the number of mraes to be served, and whether the horse "stands" or "travels," make such a thing an utter impossibility. It goes without saying that the food of the travelling horse in full service should be highly nutrient, and calculated to keep the animal in high "hard" condition without loading the system with fat. The best of old oats in generous quantities, a moderate allowance of prime picked hay, the bulk of which is chaffed and the balance given at night, a few carrots, some old crushed beans or white peas, and an occasional mash of bran and linseed on the eve of a rest day, form the usual diet for the stallion in full service. It has been experimentally demonstrated that the requirements of a working horse may be met roughly by giving 2 lb. 14 oz. of oats and 1 lb. 10 oz. of hay for every 220 lb. of live weight. It is a good basis to start on; then give the additions as required for the special service the animal is called upon to perform. The use of condiments and stimulants is not necessary, and drugs, except in cases of temporary indisposition, are best avoided. In getting the animal into condition it is a good plan to give a few bran mashes, and, if considered desirable, a dose of physic or a few doses of alterative powder. When the physic has set, one should begin walking exercise, and gradually introduce the corn, increasing both it and the exercise until the maximum is attained. If a stallion does not travel, and is not worked, he should be led at six miles every day, and ten would be better. There is nothing so conducive to good health and certain stock-getting as plenty of exercise and the avoidance of anything approaching fatness. Much of the disappointment with overfeeding stallion used for service is due to overfeeding and insufficient exercise. At the same time, the animal must be fed so as to compensate for the exhausting character of his work. The owner or attendant, if properly qualified to look after such an animal, should be able to judge of sufficiency. With the man there is generally a tendency to over rather than to under-feed.

Over-shot Fetlocks.

Where horses are broken in too early, or before properly developed, and while their bones, tendons, and ligaments are weak, or where young horses are rattled at too fast a pace, or any horse is over-driven, overloaded, or over-worked in any way, especially in hilly districts, the result is that they "go over in front," and the owner expects that a blister and a few weeks' rest at grass will put the matter right. It does not, as a rule, effect anything like a perfect resoration where Nature has been badly outraged, but it is the best thing to do, and if the mischief is not too great and

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GURNEY-OXFORD "CHANCELLOR"

The Range every woman always wants!

$54.75

No matter where you go in the British Empire your money cannot buy better value than the Gurney-Oxford "Chancellor" at this price. That we know and guarantee. This price includes freight to any point as far west as Fort William.

This sensational value is typical of our new low prices.

The "Chancellor" represents the very highest quality it is possible to put into a stove at any price. It is a stove that delights our expert designers because they had unlimited time and resources in which to perfect it. Your Gurney-Oxford "Chancellor" can be only a source of absolute satisfaction and economy all the days of your life.

The Gurney Enormous Output is alone responsible for these exceptionally freight-paid prices on Canada's finest steel ranges. Our huge foundries, the largest stove and heating apparatus works in the British Empire, enable us to do a tremendous volume of business at a small rate of profit.

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70 Years of Gurney Success

The Gurney name is a household word throughout Canada for the highest quality in stoves. Three generations of the Gurney family have specialized on the buying of raw materials, on up-to-date foundry methods, on correct stove designing, on putting in all the quality and improvements that brains, skill and capital could suggest. We have done everything but set the selling price.

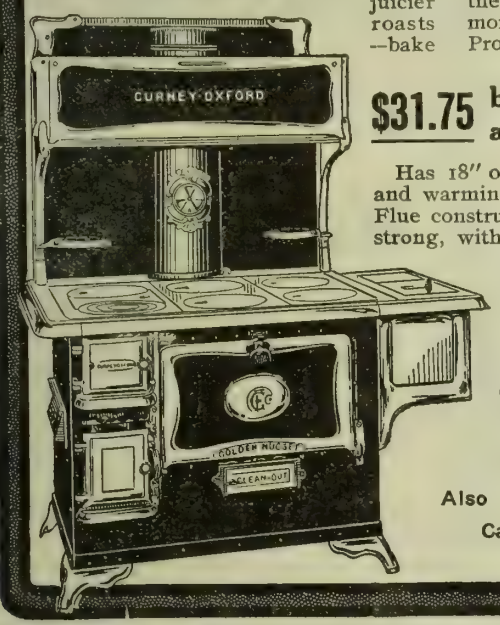
From now on the factory will set new low fixed prices for every Gurney-Oxford Stove. This plan will take all the dickering and uncertainty out of stove buying and will guarantee you the utmost stove value for the least money. Our new catalogue "The Stove Problem Solved" gives you full particulars.

The splendid guaranteed 20" oven is the pride of the Gurney-Oxford "Chancellor." Our patented system of Divided Flues compels the fire to heat the oven evenly. Means perfect, even baking and a big fuel saving. Large Reservoir that really heats water; tea shelf, warming closet. Shipping weight 535 lbs.

The Gurney-Oxford Economizer is a patented device for controlling the draft; very easy to use, worth the price of the Range as it means a saving of one ton of coal in five.

Plain, rich-looking body of the "Chancellor" is high-est grade blue steel with steeple headed rivets artistically hand. Roomy top, with corner to keep Fire Box has exclusive design for dumping ashes and clinkers.

Grates for hard coal and coal or wood.



$31.75 buys the GOLDEN NUGGET a smaller, beautifully built Range

Has 18" oven (20" oven $34.25), 6 covers, reservoir and warming closet, famous Gurney-Oxford Divided Flue construction; Duplex Grates and scientific fire-box, very strong, with heavy steel-plate construction; non-sagging top; certain to give life-long satisfaction. Prices include freight as far west as Fort William.

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You ought to send now. A postal will do. Address at left.

the rest is a long one, and taken under favorable conditions, it often happens that there is a temporary improvement, which is maintained until the animal is put to work again. But there are other cases of over-shot fetlocks that are not so much due to work as to natural weakness, and where there exists a condition amounting to partial luxation of the fetlocks. This is often seen in the hind joints, especially of weedy bloods, and is for all practical purposes incurable.

Official Records of Holstein-Priesian Cows.

The following records of Maritime cows are recorded in the March 1st to 15th list recently issued.

Senior four-year-old Class.

Dorris of Pleasant Valley, owned by A. E. Dickie, Central Onslow, N. S., 521.8 lbs. milk, yielding 21.18 lbs. butter.

Four-year-old Class.

Ormsby Belle, owned by Lea and Clark, Victoria, P.E.I., 470.5 lbs. milk. yielding 19.09 lbs. butter.

Junior Three-year-old Class.

Homestead Lass, owned by R. L. Hicks, Dalhousie Jct., N. B., 10-day record, 759.2 lbs. milk, yielding 34.85 lbs. butter.

Junior Two-year-old Class.

Milly Pontiac Pledge, owned by R. L. Hicks, 284.7 lbs. milk, yielding 11.37 lbs. butter in seven days.

A Change what a Pure Bred Sire Makes.

With the first cross of a pure bred sire with an ordinary herd of cows the resulting heifers will have 50 per cent of the blood of the sire. The second cross brings heifers with 75 per cent. The third cross gives 87½ per cent and the fourth cross nearly 94 per cent. Fourth generation females when bred to a pure bred sire of agreeing blood have only about six per cent of the scrub blood to contend against the blood of the sire. All subsequent breeding should be in line, for then the progeny has the advantage of the strong impulse of pure bred blood on both sides.

But some f armers are unwise in their subsequent breeding. They are quite apt to change breeds, thinking wrongly that they are going to get the best qualities of both the breeds. Almost invariably the result is one of disappointment for there is set up at once a warring of two prepotencies, that of the sire and that of the dam. Very much better cows will be produced by keeping the herd stadily in line with the blood of the original sire.

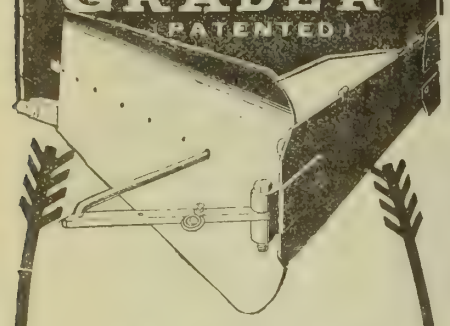
But the farther on this road we go the more careful we should be always to select bulls of strong prepotency. When we change sires it is best to select one that has a fairly close family relationship. In this way we take advantage for a progency of agreeing and not contending tendecies.

By making a close study of this matter a farmer can build up in a few years a splendid herd of grade cows which will command a big price whenever offered for sale.

But very rigid selection should be maintained by selling off the older as well as the poorer cows, keeping the heifers to prove correctness of the breeding theories that have been followed.

RED ROSE TEA "is good tea"

The Martin Farm
DITCHER
and Road
GRADER
(PATENTED)



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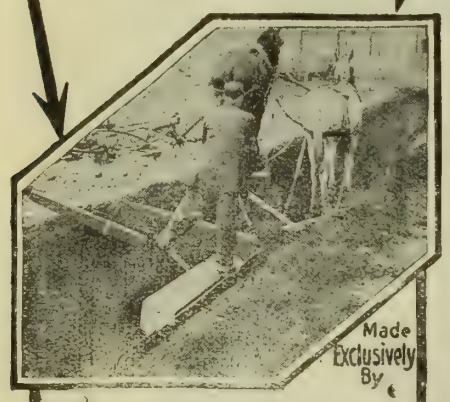
For this small sum you can own this wonderful Ditcher and Grader—a necessity on every farm—it will clean out your ditches—run the water off your low lands—dig your tile drains to 2 or 3 feet. It will do in one day the work of 50 men with picks and shovels. It pays for itself with its *first* day's work.

Send to-day for particulars.



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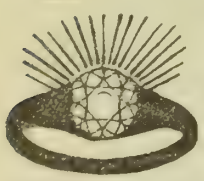
COUNTY OF LONDONDERRY
COUNTY COURT.

DIVISION OF LONDONDERRY.
BY THE RECORDER OF LONDONDERRY.
EQUITY SIDE.

Between MARGARET HAMILTON, Administratrix of Sarah or Sally Cochrane, Deceased, Plaintiff. WILLIAM JOHN COCHRANE and ALEXANDER LINDSAY, Defendants.

Information in this suit is required by the above Court as to the Descendants of the late Mary Walker, daughter of James Cochrane, of Tirglasson, in the County of Londonderry, Ireland, Deceased. About 30 years ago Samuel C. Walker, a son of the said Mary Walker, resided at Sussex, King's County, New Brunswick, America.

ALFRED MOORE MUNN,
Clerk of the Crown and Peace,
Court House,
Londonderry, Ireland.



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Protrusion of the Rectum in Pigs

(continued from page 459.)

Treatment.

In the case of young pigs, return is greatly facilitated by holding them head downwards, or, in the case of heavier, older animals, by standing them with the head down hill, or raising the hind parts by packing them with litter. This, and pinching the animal over the loins, will prevent straining to a considerable extent, and so tend towards retention. In cases due to constipation a dose of castor oil should be given, and its action assisted by in jection of tepid water to which glycerine has been added. Success may be confidently looked for if attention is paid to the diet, and especially if, instead of blowing the youngsters out like drums with a lot of sloppy stuff, they are given only a little corn to allay their hunger for a day or two, the old diet being gradually resumed. In the case of heavy hogs, and especially old sows, it is often most difficult, in some cases impossible, to return and retain the gut. Such animals are difficult to control, they are sometimes savage, and all their strength is invariably opposed to the efforts of the operator.

In applying sutures, the greatest difficulty is experienced with those cases in which the rectum is protruded before or during parturition. Better than sutures roughly inserted is the instrument know as West's anal clamp. It is much less irritating, less likely to be torn out, and more easily inserted and removed for the purpose of permitting the rectum to be emptied, than sutures. In those cases where the protruded organ cannot be returned and retained—and they are not infrequently met with—or where the size and ferocity of an old sow prevent mechanical assistance being given, it is best to apply an astringent dressing and let the rectum shorten itself, partly by strangulation and sloughing of the outer portion, and partly by shrinking into its proper position. For this purpose an ointment of one part of dried powdered alum and five parts of lard is recommended; but wherever possible mechanical assistance should be given, and an early attempt made to return and retain the protruded organ.—Veteran.

Closing of the Agricultural College

Owing to a number of students enlisting in active military service, and owing to others wishing to get home early to help speed up farm production, the College of Agriculture was closed some two weeks before the advertised date. Those who spoke at the closing were Monseigneur Kennedy of Truro; Rev. W. P. Grant, Truro; Principal Soloan and Principal Cumming.

In the Principal's opening speech, some interesting facts in regard to the College were given. He stated that the enrolled attendance, 58, for the year was just about half of the enrolled attendance prior to the war. He further stated that this was the completion of the eleventh session at the College of Agriculture, and that during these eleven sessions some 445 students had been enrolled. Accurate statistics are not yet available, but as near as he could estimate, 85 per cent of these were now farming for the most part in the Maritime Provinces. 170 had completed the couse and had been awarded the Associate Diploma of the College. Added to this number were 21 who would receive a Diploma at the present time. Somewhere between 80 and 100 of the ex-students were now wearing the King's uniform, a number likely to be considerably increased in the course of next month. Of those who had received the College Diploma 28 now occupied professional positions in Departments of Agriculture and Agricul-

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We are doing a splendid trade with Farmers' Clubs and our

Cream of the West Flour

the hard wheat flour guaranteed for bread

is giving every satisfaction. For example, here is a letter received from Mr. Hester W. Healy, Secretary of the Cleveland Farmers' Club, with headquarters at Richmond, P. Q.

Dear Sirs :—

I wish to say that you have given us the very best satisfaction, and the quality of feed and flour has been fine. We may not order any more this Spring, as we think that we will have enough to carry us through to grass. If we find that we can use another car this Spring we will certainly give you the order. We will be in the business next Fall again, and will very likely use more next season than this.

Our ***Cream of the West*** is a strong, nutritious, light-raising Western Wheat flour that makes the finest of home-made bread.

Queen City Flour is a blend of Ontario and Western Wheat—an excellent all-round bread and pastry flour.

Monarch Pastry Flour is milled from Ontario soft wheat exclusively for pastry purposes.

Write for quotations on flour, cereals and feed direct to

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H. E. RAINS, 112 Lawrence St., Halifax, N. S.

tural Colleges. He was glad to be able to state that while the vast majority of the ex-students were in the Maritime Provinces, yet those who had gone elsewhere were now occupying prominent positions. Among these were E. S. Archibald, Dominion Animal Hunsbanman, Ottawa; Elton Lewis (now deceased), formerly Superintendent of Exhibitions, Alberta; P. H. Moore, Superintendent Dominion Government Experimental Farm, Agassiz, B.C.; G. H. Unwin, teaching at Agricultural College, Guelph; W. V. Longley, Principal Agricultural High School Minnesota; N. McKay District Representative, Province of Ontario; W. H. Porter, F. E. Ellis and G. E. O'Brien engaged in agricultural journalism; Lorn Smith, Assistant State Entomologist, Virginia; E. M. Straight, County Demonstrator, Maine; J. G. Taggart, Staff Agricultural School, Alberta; M. B. Davis, Assistant Dominion Horticulturist, and others.

Touching reference was made to the decease of Cuthbert Shipton, a graduate of 1912 who had failed on the fields of Flanders, and reference was also made to the fact that B. H. Landels who a year ago had been on the staff of the College had also been wounded while fighting in Flanders.

The highest standing of the year was made by W. DeLong of Acaciaville, Digby Co., who wins the Governor General's M dal. The keenest competition was for Premier Murray's Cup awarded to the student making the highest standing in live stock judging. The winner was Thomas C. Munn of Leitche's Creek, C.B., but only four points separated the three leading competitors, the others being L. T. Chapman of Hastings, Cumberland Co., and W. A. Flemming, of Truro, N.S. The cup for the best judging of seeds was won by H. St. Clair Cutten of Lower Truro.

With reference to the opening of the College next year it was stated that five of the teaching staff were now wearing khaki and that moreover the continuance of the war would no doubt lead to a further thinning of the ranks of the student body. However, it was stated that plans would be made to continue the work as usual and that applications for entrance to the College in November next would be regularly rceieved and that a decision in regard to the course to be pursued would be announced shortly after mid-summer.

Fire Prevention in the Home.

Clean-up Day is as Necessary Inside the Home as Outside.

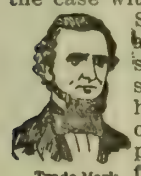
Carelessness is credited with seventy-five per cent of Canada's enormous fire loss. During 1915 no fewer than 676 fires occurred in dwelling houses. Of this number it is safe to say that a great majority were attributed to the threadbare excuse "cause unknown." Were the cause of many of these fires correctly reported, it would be "careless and untidy housekeeping."

Cleau-up day is as necessary inside the house as out. Closets, attics and other out-of-the-way places harbor accumulations of old clothes, discarded furniture, books, waste paper, etc., all greatly increasing the fire hazard. Matches left in the pockets of clothes may easily ignite from friction in swinging against a wall. Sparks from a crack in the chimney passing through an attic may start a fire among the contents. Defective stovepipes and flues, accumulations of dust, etc., in hot air pipes, wood and inflammable material too near furnaces, are constantly causing fires in dwelling houses.

Canada cannot afford to continue this enormous sacrifice of her created resources. An average annual fire loss of approximately $23,000,000 for the past five years constitutes the blackest record of any country in the world. When all our power, both financial and physical, is required for the great task in hand, the housewives in Canada should carefully and consistently clean up their homes remedy all dangerous conditions, remove inflammable material, and assist in reducing the enormous drain which is taxing the financial resources of our people and our country.

Worms in Children

Worms are a danger to the health of a child. Make sure that such is not the case with your child.



Trade Mark

Signs of worms in children are: Deranged stomach, swollen upper lip, sour stomach, offensive breath, hard and full belly with occasional gripings and pains about the naval, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever.

If at all doubtful, make certain of health by using Dr. True's Elixir, the Family Laxative and Worm Expeller. It's the one best thing for regulating the stomach and bowels and expelling worms. At your dealer's 35c, 50c and $1.00. Advice free. Special treatment for tapeworms. Send for book.

Knowlton, Que. Dr. True

Nervous Dyspepsia

The Modern Scourge
and How to Meet it.

The speed at which we live, the hustle now so necessary for success have unfortunately a very adverse effect on the nervous and digestive systems of Canadians. The baneful results, increased lately to an alarming degree, often lay the seeds of more deadly trouble, but it will be satisfactory to learn of the ever-increasing popularity in the Dominion, of the Great British Remedy, Dr. Cassell's Tablets.

Dr. Ramsay Colles, J.P. of the City of Dublin, a man of high eminence in the scientific world, says :—" I have great pleasure in expressing my satisfaction as to the curative effect of Dr. Cassell's Tablets in cases of nerve troubles. From several cases which have lately come under my notice I am able to form the opinion that Dr. Cassell's Tablets constitute a safe and reliable family remedy, and appear to be specially effective for nerve and bodily weakness."

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great therapeutic value in all derangements of the Nerve, Digestive, and Functional Systems in old or young. They are the recognised modern home remedy for Dyspepsia, Nervous Breakdown, Stomach Catarrh, Kidney Disease, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; 1 tube 50 cents, 6 tubes for the price of five.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

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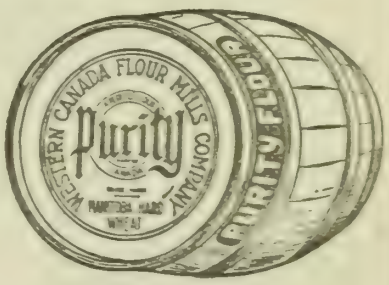

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COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

Q. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

Elmhurst Stock Farm!

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys!

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8 880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Great Dispersion Sale of 75 Head of Imported and Canadian Bred Ayrshire Cattle.

The celebrated Glenhurst herd, the property of James Benning Williamstown, Ont. Wednesday April 19th., 1916 World's Fair Champions were bred in this herd, included are six females of the famous Floss Strain. This herd was founded 55 years ago, and is headed by "Glenhurst Torrs Mayor" 43480 year Champions at Regina 1914 sire 'Lessnessock Coweb"(Imp) 30586 Dane, Torrs Cony 3rd 30597.

Mature Cows milking 60 lbs per day. four year olds milking 50 to 55 lbs per day, two year olds making records of 8500 lbs, Cows milking 1500 to 1900 lbs per month testing 4.02% to 4.067% butter fat, Cows large size, large teats and good testers and good milkers.

Vehicles will meet trains from East and West the morning of the sale. Write for Catalogues Sale will commence at 1 P. M.

JAMES BENNING, - Williamston, Ont.
A. PHILPS, M.L.A., Auctioneer

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

Butter Parchment at Farmer Office, Sussex

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell View Farm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires!

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Small Fruit Plants

STRAWBERRIES: Senator Dunlap, Warfield, Pokomoke, Glen Mary, Three W's, Parson's Beauty, Sample, etc.

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EGGS FOR HATCHING

Barred Plymouth Rock, White Wyandotte and White Leghorn.

SEND FOR PRICE LIST.

ORCHARD HILL FARM
Brown's Flats, N.B.

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What's the use of paying big prices for Eggs for hatching when you can get the BEST LAYING STRAIN of Barred Rock Eggs, for $1.00 per setting. Parks Rocks have been bred for Egg production for over 25 years. A few Hens, Pullets and Cockerels for sale.

J. H. PRICHARD, - - SUMMERSIDE, P. E. I.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:—

Ayrshire Cattle—Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine—3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices.

Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - Clifton, N. S.

Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

Poultrymen Attention!

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.

Send for free Catalogue and give us a trial order

EGGS FOR HATCHING

From two pens of Pure Bred White Wyendottes. Selected Birds. Pens headed by males imported direct from John S. Martin, Port Dover and Mcleod Bros, Stony Creek, Ont, the latter bird guaranteed by them to be bred from a hen who in her pullet year laid 249 eggs. Price $1.00 per 15. Also from one pen of Single Comb Rhode Island Reds, good laying strain, good color. Price $1 per 15.

Hattie E. Crowe, Lower Truro, N.S.

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Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

FOR SALE!

Shorthorn Bull, 5 months old. Dam weighs 1340 lbs. and in four months has given over half the amount of milk required in twelve months to qualify for Record of Performance. Her sister Gertrude 103850 has an Official Test of 9383 lbs. in 314 days.

P. R. L. FAIRWEATHER, Rothesay, N. B.

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Standard Bred Poultry

Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

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Jersey Cattle

F. W Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Oattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BARRED PLYMOUTH ROCKS

We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

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First prize Registered Holstein Bull over two years old. $100.

Two Registered Yorkshire Sows over 7 months old, best bacon type at $18 each

20 Big Barred Rock Hens, $1.25 each; Roosters, $2.50.

20 Beautiful Pure Bred White Wyandotte Hens, $1 25 each; Roosters, $2.50.

Massey-Harris Root Cutter, cost $15, price $7.00.

Mixed Breed Hens from free range, soon laying, 75 cents each.

J. S. GIBBON,
East Riverside, Kings Co., N. B.

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FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

WHITE WYANDOTTES—Bred to lay and win. Eggs, $5 00, $3.00 and $2.00 per 13, according to quality.—CLARENCE FAWCETT, Sussex, N. B.

FOR SALE—Pure bred Buff Orpington and White Plymouth Rock Eggs, $1.25 per 15.—ELWIN U. HARRISON, Maccan Station, N. S.

FOR SALE—A pure bred Clydesdale Stallion, rising two years, from best of imported stock. Apply to FRED E. SHARP, R. R. No. 1, Norton, N. B.

FOR SALE.—Five trios of Regal White Wyandottes, (Cockerel and Pullets), $5.00 per trio. Eggs for setting $2.00 per 15.—L.V. MATTHEWS, St. Mary's Ferry, N. B.

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BOYS AND GIRLS—Look I will pay you forty per cent for selling Easter Cards Write for particulars, Address EMERY H. SMITH Nauwigewauk, N. B.

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FOR SALE.—Bronze Turkey Eggs from large hens, headed by 40 lb. gobbler, $4.00 dozen; B.P. Rock Eggs, $1.50 for 13; W. Leghorn Eggs, $1.50 for 13; White Wyandotte Eggs, $2 00 for 13; Guinea Eggs, (Pearl) $1.00 for 9. Belgian Hares and Flemish Giant Rabbits, $1.00 each and upwards. No orders filled parcel post.—HOTEL DIEU FARM, Chatham, N. B.

GET YOUR NEW SUIT:—From Catesbys, London, England, for half what you pay local tailor. Best materials, style, fit guaranteed, or money back. Write for free Catalogue, self measurement form and patterns. Address CATESBYS LIMITED, CANADIAN OFFICE, 191 WELLINGTON ST. WEST. TORONTO. MENTION—Maritime Farmer.

SMALL ORCHARD FOR SALE:—On Avon River, Hantsport, Nova Scotia. Seven Acres with 60 apple trees, plums, cherries, pears, currants, raspberries, gooseberries, etc. Good house four rooms down stairs, four up stairs. Hot and cold water in house. Electric lights could easily be installed. Excellent summer bathing. Splendid opportunity for market gardner. Only ten minutes to churches and station. Owner's reason for selling, ill health. For further particulars, apply to W. H. SWEET Hantsport, N. S. 2917.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16 114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - - CANARD, N. S.

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R. O. M. HOLSTEINS

Present Offering—Bull and Heifer Calves from high producing dams.
Prices reasonable for the quality.

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TURNIP SEED FOR SALE.—The Nova Scotia Agricultural College has two vatieties of turnip seed for sale—Corning's Lapland and Sutton's Champion—price 50c per pound, in quantities under 10 pounds, 40c per pound for orders over 10 pounds: Address NOVA SCOTIA AGRICULTURAL COLLEGE, Truro, N. S.

"ORCHARD HILL WHITE WYANDOTTES"—Martin's Regal, Beulah and Norfolk strains, some of the leading winning and laying strains in Canada. Selected females mated to "first prize utility cockerel" of Maritime Winter Fair, Amherst, 1915. Eggs $2.00 per 15; good utility matings, $1.25.—DEWITT SMITH, Amherst, R. R 4, N. S.

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Ever Stop to Think

Why the other fellow gets five cents more for his EGGS than you do?

He spends one cent and makes four. puts his egg up in dozen boxes, seals the package and puts the date on them. His name and date printed on the box is the guarantee of quality. That is why the consumer asks for his particular eggs.

Follow his example and write

THE
D. F. Brown Paper Box Co., Ltd.
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for a sample. 1000 for $10.00; 500 for $6.00; 250 for $4.00 printed including seals.

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Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.

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Winners at Amherst, Halifax and Sydney. Eggs for hatching, utility $100 Exhibition $2.00 per 15. [Special pens prices on application.)

CHAS. JOHNSTON
Springfield Farm
Box 227 North Sydney N. S.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2 00 per 15.

PEN NO 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm,"
Oxford Junct., N.S.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00

Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex. N.B.

Registered Ayrshire Bulls For Sale.

Four P. B. Ayrshire Bulls. No 1 is one year old. Winner of 1st Prize at last Exhibition. Dame produced 13183 lbs milk and 586 lbs butter fat in 12 mos. R. O. P. Test. His Sire's dam produced 11365 lbs of milk and 511 lbs butter fat as a 4 yr old in 12 mos R. O. P. Test.

No. 2 is 18 mos old. Prize Winner at Exhibition. His Dam now in R. O P. Test has produced in first two months of Test 2802 lbs milk and 121.4 lbs butter fat. His Sire is from Dam of above Bull.

No. 3 is 3 mos. old. His Dam is same as No. 2

No. 4 is 7 mos. old. His Dam qualified in R. O. P. Test with High Records. These Bulls are all in Excellent Condition.

ARTHUR S. DENNIS,
"Willow Farm,"
Stewiacke, Col. Co., N.S.

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it is the **trained** man who leads. This school makes a specialty of training young men and women to fill responsible, good paying positions. Prepare yourself for one of these by taking a course at the

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Booklet describing our courses of study sent on application.

ONE CENT A WORD

FOR SALE.—Pure bred Ayrshire Cow.—RALPH TAYLOR, Barss Corner, N. S.

FOR SALE—Two registered Ayrshire Bulls.—L. HERRIDGE, Hoyt, N B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

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How to Classify Fowls

Although there are several very excellent methods of classifying the many races of domestic poultry, there is none so good as by means of economic characteristics. It may surprise some to know that there are over a hundred distinct breeds of poultry, and upwards of three hundred varieties. Many of these are of no value to the utility poultry-keeper, since they are merely ornamental and possess neither laying nor table properties. Sometimes fowls are classed according to country of origin, and dividing the breeds thus we have the principal classes—the Asiatic and the Mediterranean.

The Asiatic is a large heavy bird, possessing good edible qualities; the hens, as a rule, are poor layers, but reliable sitters. The Mediterranean on the other hand, as a small-bodied fowl, carrying a single comb; the hens are splendid layers but poor sitters, while the flesh qualities are unsatisfactory. Another method of classifying is by means of color of plumage, in which case we have white birds, black birds, buff birds, etc., but since this serves no useful purpose to the utilitarian it is not worth while discussing it. Then, again, fowls are sometimes classified according to the presence or absence of leg feathering, to the shape of the comb, to the possession of the fifth toe, and in many other ways, none of which, however, are of any practical value.

The best, and only really satisfactory method of classifying fowls is by means of their economic qualities, since this denotes at once for what purpose a breed is most suitable. Dividing the varieties in this manner, we have four great classes, namely: (1) The table, (2) the non-sitting or laying, (3) the general purpose, (4) the fancy. To the fancy belongs by far the greater number of breeds, including, as it does, all the varieties of Bantam and Game fowls. Fancy fowls are those that are bred or selected for their outward characteristics only—their plumage, shape, comb, wattles, and general appearance. Provided that these points are correct, the number of eggs the hens lay, or the quality and flavor of their flesh, is of small importance. The fancy is a great and very valuable class, and there is not the least doubt but that had it not been for the fancy breeds of poultry, the industry, as a whole, would not be in anything like its flourishing condition.

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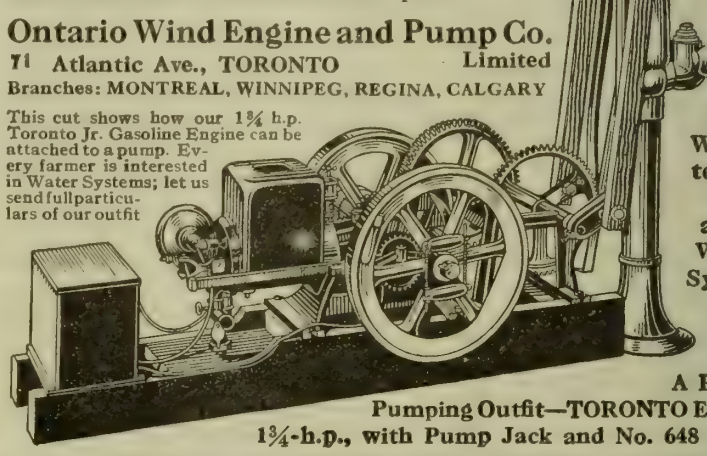

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Potato Growing and the Maintenance of Soil Fertility

By W. W. Hubbard, Superintendent, Dominion Experimental Station, Fredericton, N. B.

What is a fertile soil?

A soil in which an adequate supply of plant food is so surrounded by chemical, bacteriological and mechanical or physical conditions that our crops through their root system will flourish.

What is an infertile soil?

You say a soil too poor to grow crops and you wish to convey the impression that there is so little plant food in the soil that practically all the plant requires, has to be applied. There may be soils without plant food in them somewhere in this province, but I do not know where they are.

No, an infertile soil is not necessary a soil barren of plant food, for some of our richest soils will not grow crops, and I very much doubt if anyone here can show me an area which when all the chemical and physical conditions are made right, will not produce crops even without the addition of any plant food.

A soil to be chemically right must not be very acid nor very alkaline, and to be physically right must be fairly divided into particles, have an abundance of humus or organic matter in a decaying state and with sufficient, but no great excess of moisture and also be open enough that the air may readily circulate through it, then the climate must warm it to 43 degrees or above. When these conditions are right, the soil becomes a great storhouse of bacterial life and through the influence of these minute organisms all sorts of changes take place in the composition of the soil, and soluble plant food becomes available.

It must always be borne in mind that plants have to drink all their food and that it is only when fertilizing material becomes dissolved that it becomes of use. All fertilizing elements are not soluable in water, and it is only through chemical or bacterial action that they become available. This fact explains why sometimes fertilizers fail to give noticeable results during the year in which they are applied. Take Basic Slag for instance; this material is not soluble in water at all and it is only when it comes in contact with an acid solution that it gives up its phosphoric acid.

As above stated, a soil cannot be right for plant growth unless it contains a fair proportion of organic matter, i.e., vegetable substances in process of decay, called humus.

In a state of nature, soils which are producing hardwood forests and grasses are yearly adding to their humus by the falling of the leaves from the trees and the dying down of the grasses. In softwood forests there is much less humus formed and this explains the great difference in natural available fertility between hardwood land and that cleared from a growth of evergreen and resinous trees. This illustration very forcibly presents itself to us the great value of humus. Allow me in the words of the Dominion Chemist to impress upon you the great agricultural importance of this vegetable matter termed "Humus."

1st.—"It is the natural storehouse and conservator of nitrogen, which element is the most expensive of all plant foods when it becomes necessary to purchase it in commercial fertilizers."

2nd.—"It furnishes the food upon which the soil micro-organisms live, and which by their like functions convert its organic nitrogen into nitrates."

3rd.—"It possesses considerable amounts of the mineral food constituents. These, in the further decomposition of the humus—a process continually going or in the summer, are liberated in forms available to growing crops. We have reason to believe from recent research, that the mineral humates furnish a large proportion of the potash, lime, etc., used by crops."

4th.—"It serves to increase the absorptive and retentive power of soils for moisture."

5th.—"It regulates and protects against extremes of soil temperature."

6th.—"It opens up and mellows heavy soils."

7th.—"It serves to materially diminish the loss of fertilizing elements by drainage, thus permanently improving in the best way, light soils."

In this province many of our so-called run out and sometimes abandoned farms are simply lacking in humus. By an exhaustive system of farming the humus was not replaced as it was taken out and soil conditions became impossible for plant growth, though in all probability there are large stores of plant food in those soils awaiting only the addition of humus, which can be added in several ways. On very run out soils, some barn-yard manure will probably be required to introduce bacterial life to assist in providing soluable plant food. Perhaps five (5) tons to the acre will be enough to give buckwheat a start. If no manure is available then buckwheat may be started by a light application of fertilizer after it has got its growth. Plough in this buckwheat. If it was a pretty scanty crop, grow buckwheat the next year and sow clover or red clover, or both. It will be desirable to treat the clover with nitro culture, 25 cents worth of which will treat a bushel of seed. The soil should now be in a condition to grow peas; treat the seed peas with nitro culture and plough them in, say in August, then sow winter rye and clover. Use gypsum, ashes and basic slag, or lime if it can be got, in place of gypsum. The rye will make some fall growth and help protect the clover. It will come on in the spring and should enable the cutting of a crop of hay. The second growth of clover can then be turned under and there should result a soil which can be treated in the ordinary way. It will be seady, with ten loads of manure or a half-ton of fertilizer to the acre to give a good crop of potatoes, grow a grain crop the following year, seeded down to clover for a crop of hay and to further enrich the soil.

This much for the man who states his land is so poor that he cannot grow anything on it. Probably its only poverty is its lack of humus and nitrogen, for by no possibility could the other elements be all cropped out in this young country. A way has been indicated as to how this land may be at least partially supplied with humus, without which commercial fertilizers or large applications of bary-yard manure are more or less wasted, though if an adequate supply of bary-yard manure is available, the land could be much more quickly brought in than has been indicated.

As to the inorganic elements of fertility in the soil, we can learn something from the work of the Experimental Farms, through Dr. Shutt, Dominion Chemist. From his researches he estimates that average Canadian soils contain from 3,500 lbs. to 6,000 lbs. Phosphoric Acid, and from 5,500 lbs. to 11,000 lbs. Potash per acre in the first eight inches of the surface.

Sandy and gravelly soils contain less of these elements than heavier soils, while heavy clay soils contain **relatively more Potash than Phosphoric Acid.** All this supply is not immediately available to the growing crops however. Of Potash it has been determined that only .23 of 1 per cent is available, and of Phosphoric Acid 5.66 per cent in the upper six inches of the soil. This would mean then that of the Phosphoric Acid, there would be from 198 lbs. to 339.6 lbs. per acre available in any one year. Of the Potash, there would be from 126.5 to 253 lbs. per acre available in any one season.

The reserve supplies become available year after year through the disintegration of the soil, due to cultivation and the chemical action of other materials, such as lime, or by the solvent action of gases and solutions formed, either chemically or bacteriologically.

In the time at our disposal it is not possible to discuss all the combinations of rotations of crops and means that might be taken to maintain fertility, but it will probably be most useful to discuss the plan now quite general, of using a three year rotation of potatoes, oats and clover in connection with making a specialty of the potato crop.

If we will just consider waht demands these three crops make on the soil, we will know best how to meet them.

We will again consult the Dominion Chemist. He gives us the following figures as to the quantity of fertilizing materials taken from the soil per acre.

	Nitrogen.	Phosphoric Acid.	Potash.
Potatoes, 100 barrels per acre	73	37	137
Oats, 50 bushels per acre	35	12	10
Oat Straw, 3,000 lbs. per acre	15	6	35
Clover Hay, 2 tons per acre	—	28	66
	123	83	248

There should be already available in soil of mderate fertility with good cultivation, at least 198 lbs. Phosphoric Acid and 126.5 lbs. Potash; more than enough Phosphoric Acid and about half enough Potash, and if the humus supply is adequate, plenty of Nitrogen. We find, however, in actual practise that an excess is required as plants do not reach all soil particles and there is also more or less wastage of fertility by darinage, chemical and bacterial action.

We therefore, to maintain the crop producing power of the land, should aim to add at least as much as is taken out. How shall we do it? We can do it undoubtedly most economically by feeding live stock, saving all the manure and applying this to the land. How much manure will be required?

Average barn-yard manure unleached will contain 10 lbs. Nitrogen, 6 2-3 lbs. Phosphoric Acid and 10 lbs Potash: 13 tons to the acre would give us:

	Amount required.
130 lbs. Nitrogen	123
86 lbs. Phosphoric Acid	83
130 lbs. Potash	248

This would seem to indicate that more Potash than that contained in 13 tons of manure would be required, and if Potash were cheap and we could buy it it might be and has been desirable to use some in addition to what we get naturally but, in these times it

(Continued on Page 508.)

SPRAYING AT DIFFERENT DATES

In order to gather further information as to the value of the early sprays as compared with the later ones a series of tests in which plots were sprayed twice before, and twice after the blossoms, were compared with these sprayed once before the blossoms and twice after.

In one series of experiments the one spray before the blossoms was put on about midway between the first spray put on just after the leaf buds were nicely opened May 17th, and the second spray put on just before the first petals opened May 31st or just before or about the time theblossom clusters were showing pink, this we have called a midway spray.

In the other test the one spray before blossoms was put on just before the petals of the flower clusters opened.

It will be noticed from the summary of the lime sulphur Arsenate plots below that there was a difference of from 2 to 3 per cent. only in favor of two sprays before the blossoms and that the two most important sprays were the ones just before and just after blossoming. From results obtained it would seem that should the period between the opening of the leaf buds and the opening of the petals of the flower clusters be short owing to weather conditions one spray may be sufficient to give practically clean fruit, but should this period be extended two sprays should be given.

A study of results from the soluble sulphur plots sprayed at different dates as shown by the summary indicates that the early spray was quite an important one and that two applications before the blossoms were advisable. It is interesting to note also that on the day following the application of the midway spray at Berwick there was a sharp rainfall of about ¼ inch as was the case with the spray after blosoming which would show that soluble sulphur is not an adhesive spray and that a heavy quick rainfall may reduce its fungicidal value and bring about increased burning also as was the case iwth these sprays.

It would seem therefore that from our present knowledge it is wise make two applications before blossoms; first after the leaf buds open, and second just before the blossoms open which dates correspond with those advised for the best control of insects.

SPRAYING AT DIFFERENT DATES.

TEST MADE AT BERWICK.

Variety	May 17	May 26	May 31	June 14	July 2	% Scab
	Time of Application					
Gravenstein	1.008		1.008	1.008	1.008	10.1
Gravenstein			1.008	1.008	1.008	14.3
Gravenstein		1.008		1.008	1.008	15.2
Gravenstein				1.008	1.008	31.3
Grkavenstein					1.008	88.7
Gravenstein	no spray					87.4
King		1.008	1.008	1.008	1.008	7.7
King		1.008		1.008	1.008	10.3
			June 1	June 15		
King	no spray					92.8
Gravenstein	t 1.008		1.008	1.008	1.008	16.8
Gravenstein		1.008		1.008	1.008	24.2
Gravenstein	no spray					91.
Ben Davis	1.008		1.008	1.008	1.008	3.1
Ben Davis		1.008	1.008	1.008	1.008	3.49
Ben Davis	no spray					75.3
Twenty Ounce	1.008		1.008	1.008	1.008	0.6
Twenty Ounce		1.008		1.008	1.008	0.8
Ribston	1.008		1.008	1.008	1.008	1.9
Ribston		1.008		1.008	1.008	3.3
Stark	1.008		1.008	1.008	1.008	5.5
Stark		1.008		1.008	1.008	4.2
Stark	no spray					70.5

TEST MADE AT FALMOUTH

	May 24	May 26	June 4	June 25	July 13	
Spy	1.008		1.008	1.008	1.008	.67
Spy			1.008	1.008	1.008	3.
Spy	no spray					51.4
Golden Russet	1.008		1.008	1.008	1.008	3.
Golden Russet			1.008	1.008	1.008	2.9
Golden Russet	no spray					34.2
King	1.008		1.008	1.008	1.008	0.7
King		1.008		1.008	1.008	2.5
King	no spray					31.1

TEST MADE AT BRIDGETOWN

	May 17	May 24	May 28	June 15	June 25	
Gravenstein	1.008		1.008	1.008	1.008	21.
Gravenstein			1.008	1.008	1.008	30.
Gravenstein		1.008		1.008	1.008	29.
Gravenstein	no spray					98.
	May 18	May 28	June 15	June 26		
Gravenstein	1.008	1.008	1.008	1.008		36.
Gravenstein		1.008	1.008	1.008		25.7
Gravenstein	no spray					93.2
King	1.008	1.008	1.008	1.008		6.47
Kng		1.008	1.008	1.008		7.86
King	no spray					57.18
Stark	1.008	1.008	1.008	1.008		8.62
Stark		1.008	1.008	1.008		6.58
Stark	no spray					62.71
Ben Davis	1.008	1.008	1.008	1.008		8.07
Ben Davis		1.008	1.008	1.008		8.79
BenDavis	no spray					73.61
Nnpareil	1.008	1.008	1.008	1.008		3.44
Nonpareil		1.008	1.008	1.008		4.33
Nonpareil	no spray					42.00

SOLUBLE SULPHUR APPLIED AT DIFFERENT DATES.

BERWICK	May 17	May 26	June 1	June 15	July 2	% scab	Foilage injury
Gravenstein	1½-½-100		1½-½-100	1½-½-100	1½-½-100	31.5	
King	1½-½-100		1½-½-100	1½-½-100	1½-½-100	8.8	
Baldwin	1½-½-100		1½-½-100	1½-½-100	1½-½-100	0.0	
Golden Russet	1½-½-100		1½-½-100	1½-½-100	1½-½-100	13.2	
				Average of four varieties		13.4	
Gravenstein		1½-½-100		1½-½-100	1½-½-100	40.8	
King		1½-½-100		1½-½-100	1½-½-100	37.7	
Baldwin		1½-½-100		1½-½-100	1½-½-100	17.1	
Golden Russet		1½-½-100		1½-½-100	1½-½-100	17.8	
				Av. of four varieties		28.1	

	May 17	May 27	May 31	June 14	July 2		
Gravenstein	1½-½-100		1½-½-100	1½-½-100	1½-½-100	47.6	12.
Gravenstein			1½-½-100	1½-½-100	1½-½-100	47.	18.
Gravenstein		1½-½-100		1½-½-100	1½-½-100	45.4	24.
Gravenstein No spray						87.4	

FALMOUTH	May 24	June 4	June 25	July 13	
Gravenstein	1½-½-100	1½-½-100	1½-½-100	1½-½-100	8.9
Spy	1½-½-100	1½-½-100	1½-½-100	1½-½-100	4.2
Golden Russet	1½-½-100	1½-½-100	1½-½-100	1½-½-100	7.8
			Av. of three varieties		6.9
Gravenstein		1½-½-100	1½-½-100	1½-½-100	25.7
Spy		1½-½-100	1½-½-100	1½-½-100	18.4
Golden Russet		1½-½-100	1½-½-100	1½-½-100	21.3
			Av. of three varieties		21.4
Gravenstein No spray					43.2
Spy No spray					51.4
Glden Russet No spray					32.2
			Av. of three varieties		42.9

SPRAYS APPLIED AT DIFFERENT DATES.

SUMMARY.

Lime Sulphur 1.008 specific gravity or one gallon concentrate to make 37 gallons spray and 5 lbs. Arsenate of Lead to 100 gallons.

16 experiments—Two before and two after blossoms, 8.33 percent scab.

Experiment 9—One midway between first and second and two after blossoms, 11.48 percent. scab.

9 experiments—One just before and two after blossoms, 10.33 percent. scab.

1 experiment.—Two after blossoms only, 31.30 percent scab.

1 experiment—One two weeks after blossoms, 88.70 percent scab.

14 experiment—No spray, 68.6 percent scab.

Soluble Sulphur 1½ lbs. and 5 lbs. Arsenate t 100 Galoins.

8 experiments—Two before and two after blosoms, 16.8 percent scab.

5 experiments—One midway between first and second and two after blossoms, 37.6 percent scab.

4 experiments.—One just before and two after blossoms, 34.2 percent scab.

4 experiment—No spray, 65.1 percent scab.

SOLUBLE vs. LIME SULPHUR

A number of tests have been made wth soluble sulphur arsenate of different strengths to compare with lime sulphur arsenate for apple scab control and the results as given in the summary would go to show that the scab control was slightly better at Falmouth with lime-sulphur arsenate than with soluble sulphur arsenate, at Berwick the control was decidedly better with lime sulphur arsenate and at Bridgetown the soluble sulphur arsenate gave the best control. As already pointed out the first spray after blossoming at Berwick was followed the next day with a sharp rain which may have washed off some of the spray resulting in the large percentage of scab shown.

Arsenate of lead at the rate of 5 pounds per 100 gallons was used in each spray. Two sprays were given before and two after blossoming.

..SOLUBLE vs. LIME SULPHUR..

SUMMARY.

FALMOUTH.

3 experiments—Soluble sulphur 1½ lbs. to 100 gals. p.c. scab 5.1.

3 experiments—Soluble sulphur 2 lbs. to 100 gals., p. c. scab, 3.6

3 experiments—Soluble sulphur 2½ lbs to 100 gals., p.c. scab, 3.3.

2 expriments—Lime sulphur 1.008 specific gravity, p. c. scab, 1.84.

BERWICK.

1 experiment—Soluble sulphur 1½ lbs to 100 gals. p.c. scab, 42.00.

1 experiment—Soluble sulphur 2½ lbs. to 100 gals., p.c. scab 36.70.

1 experiment—Lime sulphur 1.008 specific gravity, p.c. scab 10.10.

BRIDGETOWN

5 experiments—Soluble sulphur, 1½ lbs. to 100 gals., p.c. scab 10.3.

5 experiments..Lime sulphur, 1.008 specific gravity, p. c. scab 12.52.

DIFFERENT QUANTITIES OF SOLUBLE SULPHUR

In order to find out whether a strength of soluble sulphur greater than that advised, which is 1½ lbs. to 100 gallons, will give a better control of scab, or increase the foliage injury, a series of tests were made at Berwick on Gravenstein, and at Falmouth on Gravenstein, Spy and Golden Russet. Five pounds of arsenate of lead was used per 100 gallons in each spray. The sprays were applied at the same date under uniform conditions.

It will be noticed that the fungic-

idal value of the spray was not materially increased by a strength greater than that recommended and that the stronger sprays are likely to cause increased foliage injury.

Spray used at Berwick on Gravenstein

Soluble sulphur 1½ lbs, Barium Chloride ½ lb. to 100 gals., p.c. scab 47.6, p.c. foliage injury 12.

Soluble sulphur 2 lbs., Barium Chloride ½ lb. to 100 gals. p.c. scab 84.2, p.c. foliage injury 66.

Soluble sulphur 2½ lbs. Barium Chloride ½ lb. to 100 gals., p.c. scab, 42.2, p.c. foliage injury, 64.

Soluble sulphur 3 lbs. of Barium Chloride, ½ lb. to 100 gals., p.c. scab 49.2; p.c. foliage injury, 65.

No spray, p.c. scab 73.4; p. c. foliage injury, 0.

Spray used at Falmouth on Graven.

Gravenstein—Soluble sulphur 1½ lbs. to 100 gals., p.c. scab, 6.4.

Spy—Soluble sulphur 1½ lbs. to-100 gals. p.c. scab, 0.0

Golden Russet, soluble sulphur, 1½ lbs. to 100 gals., p.c. scab 8.9.

Average of three varieties—p.c. scab, 5.1.

Gravenstein soluble sulphur 2 lbs. to 100 gals., p.c. scab, 4.7.

Spy—Soluble sulphur, 2 lbs. to 100 gals., p.c. scab, 2.2.

Golden Russet—Soluble sulphur, 2 lbs. to 100 gals., p.c. scab, 4.0.

Average of three varieties—p.c. scab 3.6.

Spray used at Falmouth.

Gravenstein—Soluble sulphur, 2½ lbs. to 100 gals., p. c. scab, 6.3.

Spy—Soluble sulphur, 2½ lbs. to 100 gals. p. c. scab, 2.1.

Golden Russet—Soluble sulphur, 2½ lbs. to 100 gals, p. c. scab, 4.5.

Average . of three varieties—p.c scab, 4.3.

Gravenstein—No spray, p.c. scab, 43.2.

Spy—No spray, p.c. scab, 51.4.

Golden Russet—No spray, p.c. scab, 34.2.

Average of three varieties—P. c. scab, 42.9.

Gravenstein—Soluble sulphur 1½ lbs. BaCL2, ½ lb. to 100 gals, p.c. of scab, 8.9.

Spy—Soluble ulphur, 1½ l bs. BaCL2 ½ lb. to 100 gals, p.c. scab 4.2.

Golden Russet—Soluble sulphur 1½ lbs. BaCL2, ½ lb. to 100 gals, p. c. of scab, 7.8

Average of three varieties—p. c. of scab, 6.9 .

Gravenstein—Soluble sulphur 2 lbs. BaCL2, ½ lb. to 100 gals, p. c. scab, 4.7.

Spy—Soluble sulphur, 2 lbs. BaCL2 ½ lb. to 100 gals, p.c. scab, 4.2.

Golden Russet—Soluble sulphur 2 lbs BaCL2 ½ lb. to 100 gals, p. c. of scab, 9.2.

Average of three varieties—p.c. of scab, 6.0.

Gravenstein—Soluble sulphur, 2½ lbs. BaCL2 ½ lb. to 100 gals., p. c. of scab, 9.2.

Spy—Soluble sulphur, 2½ lbs, BaCL2 ½ lb. to 100 gals, p.c. scab,, 4.5.

Golden Russet—Soluble sulphur, 2½ lbs, BaCL2 ½ lb. to 100 gals., p.c. of scab, 12.8.

Average of three varieties—p. c. of Scab, 8.8.—Experiments conducted at Kentville, by Prof. W. S. Blair.

Seeding of Clover

Out of twenty-three farmers in the Eastern Provinces who have conducted illustration work for the Commission of Conservation, only two claim to have been sowing their clover seed thick enough to ensure a good catch. Twenty-one had been sowing an average amount of six pounds to the acre, whereas they now sow 10 pounds to the acre. Some had sown as low as three or four pounds but are now convinced that 10 pound is better and are sowing it. Three farmers had previously grown their own seed while now twelve are regularly doing it.

George R. Barrie, Galt, Ont., says: "The high price of clover seed had something to do with our sowing a small amount, but since growing our own seed, we do not mind sowing it heavier and find that the extra seeding more than pays for itself."

in 1914 they produced 500 pounds of ously grown his own seed states that i n1914 they produced 500 pounds of alsike seed and 100 pounds of red clover while in 1915 he grew over 1,000 pounds of red clover seed. The farmer doing illustration work for the Commission in Lanark County, Ont., in 1914, grew 1,200 pounds of red clover seed and had never grown a pound of his own seed previons to commencing work with the Commission.

SOLUBLE SULPHUR VS. LIME SULPHUR.

Where test made & variety	Time of application				% scab.	Fol. Inj.
BERWICK	May 17	Ma 31	June 14	July 2		
Gravenstein, S.S.	1½-100	1½-100	1½-100	1½-100	42.	55.
Gravenstein, S.S.	2½-100	2½-100	2½-100	2½-100	36.7	60.6
Gravenstein, no spray					87.4	0.
Gravenstein, L.S.	1.008	1.008	1.008	1.008	10.1	0.
FALMOUTH	May 24	June 4	June 25	July 13		
Gravenstein, S.S.	1½-100	1½-100	1½-100	1½-100	6.4	
Gravenstein, S. S.	2-100	2-100	2-100	2-100	4.7	
Gravenstein, S.S.	2½-100	2½-100	2½-100	2½-100	6.3	
Gravenstein, n spray					43.3	
Spy, S. S.	1½-100	1½-100	1½-100	1½-100	0.0	
Spy, S.S.	2-100	2-100	2-100	2-100	2.2	
Spy, S. S.	2½-100	2½-100	2½-100	2½-100	2.1	
Spy, no spray					51.4	
Spy, L.S.	1.008	1.008	1.008	1.008	.67	
Golden Russet S.S.	1½-100	1½-100	1½-100	1½-100	8.9	
Golden Russet, S.S.	2-100	2-100	2-100	2-100	4.	
Golden Russet, S.S.	2½-100	2½-100	2½-100	2½-100	4.5	
Golden Russet, no spray					34.2	
Golden Russet, L.S.	1.008	1.008	1.008	1.008	3.	
BRIDGETOWN	May 18	May 28	June 15	June 26		
Gravenstein, S. S.	1½-100	1½-100	1½-100	1½-100	34.4	27.
Gravenstein, no spray					93.2	0.
Gravenstein, L.S.	1.008	1.008	1.008	1.008	36.	0.
King, S.S.	1½-100	1½-100	1½-100	1½-100	7.0	0.
King, no spray					57.18	0.
King, L.S.	1.008	1.008	1.008	1.008	6.47	0.
	May18	May 28	June 15	June26		
Stark, S.S	1½-100	1½-100	1½-100	1½-100	4.07	26.
Stark, no spray					62.71	0.
Stark, L.S	1.008	1.008	1.008	1.008	8.62	
Ben Davis, S. S.	1½-100	1½-100	1½-100	1½-100	2.37	
Ben Davis, no spray					73.61	
Ben Davis, L.S.	1.008	1.008	1.008	1.008	8.07	
Nonpareil, S. S	1½-100	1½-100	1½-100	1½-100	2.34	22.
Nonpareil, no spray					42.	
Nonpareils, L.S.	1.008	1.008	1.008	1.008	3.44	

"Velvet" For Dairymen

West Chester, Pa.

Mr. Dairyman: *February 3rd, 1916.*

We have a wonderful new invention and I want to tell you about it myself. It is a source of new profit for dairymen without added expense which I call "velvet," for it is *all profit.*

Thirty-five years, longest in America, the Sharples plant has been devoted exclusively to the Cream Separator.

Its inventors produced the first cream over-flow bowl with its superior quality of smooth even cream, the first directly driven steam Separator, saving power, fuel and wear, the first and only tubular bowl with its doubled skimming force and efficiency and extreme simplicity, the bottom feed, the hanging tubular bowl, all making for convenience, durability, economy of maintenance and operation.

Now we have made another great invention, greatest of all as a profit producer, though so simple that it seems we should have had it long ago.

Thousands of carefully made observations by competent investigators, government officials and scientific men have proven beyond question that 95% of all the hand driven cream separators in America are turned below regulation speed, below the speed marked on the handle, a great part of the time and *every* hand separator is under-speeded *some* of the time.

No matter which separator, whose make, or what it is capable of doing when turned at full speed, it will lose cream and a lot of it, when the speed is allowed to drop even for a moment, and with the cream goes the profit.

THE NEW

SHARPLES

SUCTION FEED

Separator will stop this loss, aggregating millions of dollars annually to America's dairymen—stop it at once and forever.

No matter if you turn this Separator at widely varying speeds, fast or slow, it skims equally clean—no cream will be lost. The bowl *drinks its milk supply as it needs it,* always in exact proportion to the separating force within the bowl. At slower speeds it drinks less, at faster speeds more, but always just the right amount for *clean* skimming.

A thousand of these machines are in regular daily use; we demonstrated them to a finish before nnouncing them; it is the Sharples way—*absolute perfection before sale.*

The Sharples Suction Feed Separator has several very important advantages in addition to its certainty of clean skimming at any speed. The varying of speed does not change the thickness of cream; fast turning increases the capacity much above normal, just as you whip up a horse, when in a hurry. The supply can is but knee high and the machine throughout is simpler and better than ever.

We sell our Separators now, as always, subject to free trial by the buyer; but a stronger guarantee than any trial is the unbroken record of the growth of this business from the small beginning of 35 years ago to its immense proportions of to-day. It could not grow so except by the unbroken rule of complete satisfaction to customers.

Lack of space prevents explaining more fully; but send today for new book, "Velvet for Dairymen," that tells all about this money-saving invention.

Sincerely yours,

P. M. Sharples

President.

The Sharples Separator Co.

Also Mechanical Milkers and Gasoline Engines

Toronto - - - - Canada

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And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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MAY 2, 1916.

DATES OF ISSUE.

May 2-16
June 6-20

DRY CLEAN WHERE YOU ARE

Statistics show that for every dollar spent for education, America spends $6.00 for alcholoic drinks. Of the two, which in your estimation is the most beneficial to the individual and to the nation? Can you not recall some young man of your acquaintance who began life with every prospect for a successful career who eventually made a dismal failure of his life and his business, yea, wrecked his home and brought dishonor and shame to his nearest and dearest friends just because he allowed himself to drift into too close an intimacy with King Alcohol? We have seen many such young men ,older men too. We are sorry to state that men and boys are not the only victims — not infrequently the police court records contain the names of members of the female sex who have listened to King Alcohol's woeing to their shame and sorrow, and who are a bane to their friends, homes and their town. Have you ever seen the wan faces of wives, mothers and children-wan for want of the very necessaries of life while the bread winner's money is spent in the degredation of himself and family, and the rumseller and his family are waxing fat on the money that should have gone to feed and clothe the precious young tots that are forced to suffer the privations of a drunkard's children. These young children have a hard battle to fight in order to get along in after life—heredity and perchance environment is against them. Of the two, in our opinion heredity is the harder to fight, but a combination of the two is worse. The tendency of the majority of these children is not towards the best citizenship, although we frequently find cases where a child has risen above his environment. Cases of this kind are, however, few and far between. Did your heart ever go out in sympathy to ill-fed and badly clothed little children? Did you ever imagine your own loved ones in similar straits? It makes no difference what a child's heredity, environment or poverty is there are great possibilities locked up in its little body—possibilities that may become realities if given half a chance.

Despite Russia's powerful example in the abolition of their national beverage, Vodka, and France's ban on Absinthe, we occasionallyq hear men of supposed standing in their respective communities, some of them holding responsible government positions and expected to be leaders for progress, expressing their views strongly against the movement for temperance reform and in depreciation of the prohibition question. Such a system of teaching coming from men who should know better is simply damnable, and the sooner their services are dispensed with by the people, for they are the peoples' servants, the better for the people and for the country at large.

Even sound doctrine coming from leaders who go on record against the cause of prohibition will not be followed and will consequently fail to accomplish the desired ends.

If these men had to furnish the boys to fill the saloons they would right soon change their views and join the ranks of right angainst the wrong, and would strive to brighten the corner where they live.

The handwriting is on the wall. The provinces of Canada are one by one going ahead against intemperance.

The opportunity will be given ere long to "Dry Clean New Brunswick." Let each and every one who would like to help brighten saddened homes work with courage to enlist other workers in the fight. It is your fight as well as that of the other fellow's. Don't be apathetic. What your action will be will either help or mar. Dry Clean where you are. Don't be misled by what bloated faced, leary eyed individuals with a breath savoring strongly of a visit to a bar room says. Their stocks in the estimation of the right thinking public has fallen off 100% and they know it. Treat them as you would a case of Smallpox, their teaching is both rotten and dangerous, and the sooner they are relieved of their responsible leadership opportunities the better for the rising gneration and all posterity. — Dry Clean where you are.

WHY SAVE ?

A banker gives this practical illustration of systematic saving:

"I have in mind a young man about twenty "years of age working as a slate maker in one "of our quarries, who is one of our regular de-"positors in the savings department. During "a period of four years, just passed, he has de-"posited each month an average of twenty-"five dollars, a total of $1,200 for the period, "or $300 per year. This is a good yearly sav-"ing, considering the average of steady work "for him is nine months out of the year.

"Periodically this young man withdraws $500 "and invests in good bonds yielding a fair in-"terest. Since the inauguration of his saving "habit, about four years ago, he has accumu-"lated $1,500 in such securities, and if he main-"tains his average savings for several years to "come he will undoubtedly have the nucleus "of a small fortune and be in a position to es-"tablish himself comfortably in the world..

"Such an example of thrift is worth follow-"ing and is unquestionably the surest way to "become independent."

The above statement brings out in a very emphatic manner one of the necessary elements of the saving habit—that is, it is necessary to have a system and to follow that system very energetically. Employers are more and more becoming convinced that the saving habit should become just as much a part of the program of the wage earner as efficiency is a part of the program of every progressive business man.

It is just as true that you cannot be a successful saver if you do not follow a well defined and well directed program as it is that you cannot be successful in your line of work if you work at your trade or profession spasmodically.

This nation will never be known as a nation of savers unless individuals subscribe to a constructive saving program. A nation's ideals along any line can be no higher than the ideals of its individual citizens. Years ago when the mutual savings banks in the eastern part of our country were established they were operated along illtruistic lines and personal interests were sacrificed for the general good. This is coming more and more to be the case in the efforts that are being put forth by employers of labor and others interested in the savings propaganda.

Through the agency of the potal savings system the government has been able to prove itself a great civilizing power in bringing to the foreigner protection for his savings. If the government is able to accomplish these things it should make individuals, private and corporate, in every industry more desirous of doing their part in this great movement of teaching saving and econonly and provide suitable means of investing these savings to the best advantage. We believe every individual should join the crusade against waste and improvidence because it has become an important factor in the progress and development of modern industry and because there is no one thing he can do that will bring him more personal welfare and happiness.

GOT A TASK THAT ANNOYS YOU?

There is something very trying in a task. It has an unpleasant way of asserting itself at the busiest and most inopportune moments. It thrusts itself forward to blight our unpleasantest hours, and comes into our lives like an avenging power. It is never welcome, always provokes, and is ever a burden to accomplish.

There are two ways by which it can be annihilated. One is by arraying ourselves in our armor, so to speak, as they picture the Christians of old, and going out to conquer as they fought sin. The other is to woo it, as a girl a refractory lover, studying its possibilities until a real interest asserts itself and it changes its nature, ceasing to be a task, and becoming a pleasure.

WEAKNESS OF RURAL SCHOOLS

The weakness of the common schools in rural communities shows itself in their failure to educate the marginal people of the community; in their failure to train average men and women for life in that community; in their robbing the community of leaderships by training those on whom their influence is strongest, so that they go out from the community never to return; and in their general disloyalty to the local community with its needs and problems.

Preparedness is a newly coined word, yet preparedness means little more than watching the leaks. Stop up the little leaks, and there will be no big ones. Where there are no leaks—no unnecessary losses—there is a profit, and where there is a profit, there can be no failure.

Value of the Workshop on the Farm

I wonder how much the average farmer pays out every year for repair work? A large amount, indeed. And still nearly all of this may be saved by the outlay of a little expense at first. When we go to town to have some repair work done, or to get a horse shod, we not only pay the blacksmith's price, but we lose our own time while he is doing the work, and we lose the time while we are going and coming from the shop, as well. Is our time worth anything? If it is, then why should we use it so wastefully?

With a good workshop and a set of tools, we might save much of this time and expense, and after a little practice we should be able to do the work nearly as good as the mechanic. It would answer our purpose, at least.

Many a time we sit around the fire on a stormy day, when if we had a shop, we might replace some broken whiffletree, or mend some chains, or make many other needed repairs too numerous too mention. While doing this, our minds would be taken from our other work and it would be much better for our health than to be doing nothing.

Perhaps we should not try to shoe our horses or do other particular work at first, but if we are diligent, as every successful farmer is, we can soon learn to do such work fairly satisfactory.

When we have a few leisure hours, it would be time well invested if we made duplicates of several parts of our machinery which are mostly likely to be broken. Then, when repairs are needed, we will save the time and trouble of making them at once.

If we had several loads of hay ready to go into the barn, and had the misfortune to break a whiffletree or neck yoke, what an annoyance it would cause us to leave the hay out in a shower while we were replacing the broken rigging. By the economical use of our spare time, we can be prepared to meet nearly evey emergency and save many such annoyances.

If we should become skilful with the use of tools, even our household furniture can be improved and many beautiful and useful pieces of our own handicraft added to their number.

Do not keep the tools away from the boys, but, if necessary, caution them against their rough usage. Nearly every boy enjoys making his own toys, and even though it may seem that he is idling away his time and wasting material, in reality he is but learning to be a skilful mechanic, and when repairs are needed, or new buildings are to be erected, he will be equal to the occasion. Not only should he be allowed freedom in the shop, but manual training should be taught in every high school.

People say this is an age of specialization. From this would be inferred that the farmer should work only on his farm and leave the repair work for those who specialize in that line. But where is there a factory that would think of getting along without its machine shop? If every time any repairs were needed they had to be taken to a local machine shop, that factory would have to ask such exorbitant prices for its goods that the public could not afford to buy them. The workshop is just as essential to the farm as the machine shop is to the factory. If we specialize in anything, let independence be our specialization. The worshop is one great aid to independence. By its use we can keep the farm buildings in better repair and bring the farm into a higher degree of efficiency; for only an efficient farm is the farm worth while today, and the greater the efficiency, the greater the prosperity and happiness of the farmer.

Then here's to the man who works in the mill,
Or earns his bread any other way,
But the man on the farm is the freest from harm
And is the healthist man today.

"Then glory to the wood that's carved on the farmer's bench,
And thanks to God for the iron rod to mond our implements."

Claude S. Cushman in Maine Farmer.

Manures

Manure is such a valuable by-product of the farm that the young stock and the milk may seem the by-product and the manure the product for which we are feeding the stock. When added to the soil, it tends to loosen up the clays and loams, making them more easily worked, more porus, more easily and quickly drained, better aerated, and, in general, a more desirable home for beneficial bacteria and the roots of plants. Manure also has a tendency to fluctuate the soil, holding the particles loosely together, forming the desirable crumb structure. Sands are bound together and, like other types of soil, their water holding capacity is very much increased. King of Wisconsin states that where soil has had an application of manure, the surface foot has been found to hold 18.75 tons more water per acre than where no manure was applied.

The fermentation of manure develops heat and warms the soil.

The addition of manure carries great numbers of desirable forms of bacteria to the soil, that go to work liberating the more insoluable nitrates and minerals of the soil for the use of growing plants.

The effects of manure may be seen for forty years after an application, but ordinarily is not noticed after three or four years.

Chemically, manures add to the soil those elements ordinarily purchased in commercial fertilizers, i.e., nitrogent, phosphorus and potassium. Mixed manure will carry about 10 pounds nitrogen, five pounds phosphoric acid and 10 pounds potash. This makes an unbalanced fertilizer and can be balanced by adding, say, about 1000 pounds of 16 per cent acid phosphates to eight tons of manure, which will give a product corresponding closely to a 4-10-4 fertilizer.

The chemical composition of the manure depends upon the kind and age of the animal, the character of the feed consumed by the animal, whether working, producing milk or bone and muscle. Horse manure is usually given a value of $2.65; cow, $3.10; hog, $3.25; sheep, $6.05; and poultry, $6.35.

The decay of manure in the soil develops organic acids that attack the more insoluable minerals, and liberates food for the use of growing plants. Humus formed by its decay holds these minerals from leaching away.

The vaule of a ton of manure is best measured by the increased crop it produces. The Pennsylvania station reports the following:

Number of tons applied per acre, 12; value of increase in crop, $19.75; 16 tons, $21.07; 20 tons, $22.73.

Value for each ton of manure at different applications: 12 ton — value of crop per ton of manure, $1.65; 16 tons, $1.32; 20 tons, $1.14.

Counting $1.65 for the value of the first 12 tons applied, the last eight tons only gave a value of 37c per ton. Then the principle would follow that it is more profitable to spread a small amount over a small area. The liquids are easily lost if not immediately used by a growing crop, and it is not advisable to apply more than the first crop can use of the liquid portions. The solid part may remain for future crops without so much loss.

The Common Scab

The common Scab of the potato is unsightly and while it does not cause the damage that is attributed to the Powdery Scab it depreciates the selling value of your potatoes. No one wishes to buy scabby potatoes. If you do not grow scabby potatoes you will have no scabby potatoes for sale. The scab of potatoes is a fungus growth which shows itself in a rough and cankerous appearance on the surface of the tubers. A great amount of work has been expended on this disease and still no preventive is known if the land is inoculated with the trouble.

Of a large number of methods used for treating the seed potatoes, soaking them in a solution of formalin, one pound to thirty gallons of water for two hours, is the most effective. Soak the potatoes before cutting them, and if they are not planted at once spread thinly to dry. This treatment will kill the disease on the seed, but scab can live in the soil for many years without a known host. Lime, wood ashes and barnyard manure aid the growth of scab, while sulphat of ammonia, muriate of potash, acid phosphate and dissolved lime render the soil less favorable to the disease. If you have never treated your seed potatoes for scab do so this year and watch results. You will be delighted with the smoothness of the tubers. If you have used the treatment once we know you will do so again.

Get Rid of Smut

Do you remember the number of black smutty heads that appeared in your grain fields last year? Did you ever stop to think of the percentage of your grain that is yearly damaged by smut? Did you ever stop to think of the great reduction smut thus makes in the income from your fields and labors? Did you ever stop to think that these losses could be avoided by a little extra inexpensive efforts on your part?

You ask how can I do it? Well, here you are; this is the way other readers of the Maritime Farmer handle the proposition, and why not you. Now is the time to do it before you sow your grain.

This is the time of year to ensure against smut in grain. There is no reason why smut losses should be the case if the seed is propertly treated.

The best known and most widely used substance for treating seed grain is formaldehyde. This can be bought in drug stores at a moderate price. One pint is put into forty gallons of water, and the seed grain is then dipped in the mixture in such a way as to wet the outside of every kernel. Or the formaldehyde solution may be sprayed onto the grain, while shovelled over frequently and then covered with old sacks.

A few precautions should always be observed.

(1) Formaldehyde varies in strength and, if there is doubt as to its quality, a sample of it should be sent to the chemist of the Experimental Farm, in order to determine its exact strength.

(2) The sacks in which the grain is treated should first be cleansed by boiling in water, or by washing in a strong solution of formaldehyde.

(3) Everything which the grain touches after having been treated, sacks, seeder, etc., should be very thoroughly cleaned with a strong solu tion of formaldhyde (1 pint to 10 gallons of water.)

(4) If the seed is kept for some time after treatment; allow for the swelling of the seed, if you sow the grain soon after treatment, by planting per acre.

The formaldehyde treatment will prevent stinking smut of wheat, covered smut of barley, and smut of oats. It also prevents flax will if the treated seed is sown on land which has grown on flax for five or six years.

Sheep Dipping

Do you dip your sheep? If not we dare say at shearing time you found your sheep infested with vermin. Did you ever watch a vermin infested flock of sheep and see how restless they are? How they rub themselves against fences, feed racks, etc? How they bite at their skin and pull the wool until in some cases the lambs almost denuded? How they suffer! Suffering, as they do, they cannot thrive, and spring finds them in an emaciated condition. The loss at lambing time is greater than it would be if the ewes were strong and giving a bountiful supply of milk. Why not dip your sheep this summer and thus give both ewes and lambs a chance to thrive? The process is quite simple. If you follow the following rules you cannot go wrong in this respect. See that the preparation is properly mixed and the correct quantity of water is added. Don't guess at it.

Never hurry the dipping, always take care that every sheep is kept in the bath more than two minutes.

Have the bath well and regularly stirred up from the bottom always before beginning to dip, and whenever any stpoage occurs.

1. The best time for dipping is from one to three months after shearing.

2. The sheep should not be over heated or thirsty at the time of dipping.

3. If the sun is very hot, it is better to have the draining pens under shade.

4. If the nights are cold the dipping should always be stopped soon enough to allow the sheep some time to dry before sunset.

Why Cut-Off Drains are Sometimes Failures

Many drains have been constructed by farmers with the idea of "cutting off" the seepage water before it enters their field, and in attempting to do this they have dug an open-drain ditch or constructed a tile drain just above the wet spot on their land. Sometimes a drain of this kind has been successful in every way and has done the work required, but many times a drain of this kind has been an absolute failure, and the seeped area hos not been relieved in any way. There are many reasons for these failures, for usually the farmer makes no investigation of the subsoil conditions before installing his drain.

The fact of the matter is, that in most cases our seeped areas are caused by a porous subsoil stratum "pinching off," later filling with water until the surface of the ground shows the effects of seepage. A cut-off drain to be successful, should reach the bottom of this porous stratum, and if no investigation has been made the chances are a hundred to one that the darin does not reach the bottom of said stratum. If the drain line cuts through the top of the porous stratum the water can pass through the stratum under the drain, and continue to keep the soil moist.

It can not be too forcibly impressed upon the farmers that the proper drainage of land is a probluem which requires careful study by an expert, and it will be money well spent to secure the services of a competent engineer before installing a drainage system upon your land.—E. B. House, Colorado Agricultural College, For Collins, Colorado.

Features Gathered From the N. B. Women's Institute Reports

Owing to the Third Annual Report of the New Brunswick Women's Institutes being limited to a certain number of pages, we publish in concise form through the pages of the Maritime Farmer, the year's report from each Institute, up to October, 1915, and in this way hope to give the public an idea of the variety and endless amount of commendable work being accomplished by the Women's Institutes. (Supervisor's note.)

FEATURES GATHERED FROM INSTITUTE REPORTS.

Albert.—Organized October, 1913. Membership, 42; average attendance, 19. Ten copies of Canadian Home Journal taken. Since the war started, time and money have been devoted to patriotic work. Money raised by selling ice cream, home-made candy, fancy sale, basket social and garden party. Sixteen Dollars and Fifteen Cents sent to the Home Relief Fund, $90.00 to the Patriotic Fund, and $20 to the Belgian Relief Fund. To equip a bed in the Cliveden Hospital, England, $50.00 was forwarded, $42.00 of this being raised by an autograph quilt. This quilt when finished will be sent to the same hospital. Twenty-two complete outfits sent to Belgian children, also five large and two small quilts and four large boxes of second-hand clothing. One hundred and seventy-two articles sent to soldiers and Red Cross headquarters.

Elgin. — Organized October, 1913. Membership, 17; average attendance, 8. Money raised in the following ways: Conundrum Supper, $20.05; Dime Tea, $8.30; Ice Cream Social, $13.20; Patriotic Concert, $45.35. Ten Dollars given to Patriotic Fund and $33.20 expended on yarn. One box of clothing sent to Belgians.

Hillsoborough. — Forty-three members enrolled. Meetings held regularly each month. Money amounting to $90.50 collected and expended on material for the soldiers and supplies for the Belgians. At the April meeting a very instructive talk and demonstration was given by Miss Jonah on "Tea, Cocoa and Coffee. "Queen Mary" Tea held on Sock Day, when results were very gratifying. One debate held during year, "Resolved that Heredity has greater influence on the Character than Environment." Negative side won. A house to house collection netted $100.00 which went towards endowing a hospital bed. Very enjoyable pic-nic held in the summer.

Hopewell Hill. — Organized July, 1915. Membership, 17. Garden Party held August 4th, when through sale of ice crea $15.50 was raised for Patriotic Fund. To swell the contribution to the Soldiers' Disablement Fund, ice cream and candy will be sold at the Agricultural Exhibit to be held at Hopewell Hill, October 19th. Each member of the Institute will also provide a bottle of pickles and preserves which will be offered for sale. Actively engaged in Red Cross work.

Benton.—Organized October, 1914. Seventeen members enrolled. Since then membership has increased to 24. The printed programme found very helpful. A visit from the Debec Institute in January and in March the Debec branch returned the compliment. These exchange of visits were about the most beneficial part of the year's work. For Red Cross, 229 articles were made by the members. As a result of "Tag Day" $7.45 was realized to purchase yarn. An Ice Cream Social netted $34.19 and $25.00 of this went towards the Soldiers' Disablement Fund. Treasury further increased by $7.50 as a result of selling "Allied for Right" buttons and this was given to the Ambulance Fund. By meeting together with one common interest, better acquaintance has resulted. It has developed a deeper interest in one another, and in those who are not members, giving a broader outlook, being more thoughtful of others, and deepening the interest in all that pertains to the good of "Home and Country.

Debec.—A membership of 28, with an average attendance of 21. Canadian Home Journal found in many of the homes and a number of the members wear the N.B.W.I. pin. Concert held last November, when $67.50 was raised for patriotic purposes. Twenty dollars realized from an Ice Cream Sale in July was used to defray the expenses of delegates to the Convention, and other Institute work. Twenty-eight pairs socks and 43 housewives donated by the Institute and more would have been accomplished had it not been that a Red Cross Society was formed and the Institute members joined. The Agricultural Society of Debec presented the Institute with $5.00.

Florenceville. — Organized as we were in 1912, with a membership of about 30, we have become a society with an enrolment of 57. Thus we have grown in numbers and I feel quite safe in saying in interest as well. Our meetings are held on the second Tuesday of each month at the various homes of the members and the programmes carried out are particularly interesting and enjoyable. Two and sometimes three papers are read and discussed at each meeting, and as often as possible a demonstration of work done in such branches of housework as sewing, cooking, home-nursing, etc., is given. The work prepared for our programmes does not relate entirely to housework. Several papers on current events have been carefully prepared by certain members, with the result that our outlook upon the work of the world in general has been broadened and a greater interest in the lives of our fellowmen has been manifested. Then again, transcontinental trips taken and enjoyed by a few of our associates have been given to us in written version and have awakened in us keen interest in the beauties and work carried on in our sister provinces, seemingly so far and yet so near to us.

Still another departure from our usual routine we have tried and so far has pleased all concerned. Listen carefully! We have allowed a man

GROW STRAWBERRIES

Strawberries are the first money crop of the year, and bring in the cash at a time when cash is much appreciated. Let the young people on a farm look after this crop, for besides the profit, there is real joy in growing Strawberries. Have your boys get a practical start in business farming by keeping cost accounts on an acre of berries. Let them compare the profits on that acre with acres in other crops. Their figures may give you a surprise too.

Our plants are grown on deep soil, this means good roots, and are carefully dug and packed to reach you in perfect condition for planting. The most popular variety grown in the Maritime Provinces is the Senator Dunlap. Our Dunlaps, $3.50 a thousand. In orders of 5000 or over, $3.25 a thousand. Other varieties Sample, Ophelia, Arnout, Williams, etc. Send for Catalogue.

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B-H endures because it is all Pure Paint.

70% Brandram's B.B. Genuine White Lead.

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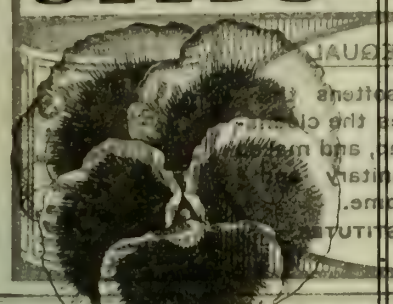

There's a lot of satisfaction in having better flowers in your garden than your neighbors can show.

There's a lot of satisfaction too in having finer flowers—those which seem anxious to give you their best blossoms. This is the result you secure from Dupuy Ferguson's seeds.

Free Catalog—Send for it to-day

Do not put off buying seeds or you will pay more money for poorer stock later on. This is your opportunity for a better garden—write us NOW!

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38 JACQUES CARTIER SQ.,
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Fruit Packages

As the strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,

HANTSPORT, N. S.

to enter our sacred portals, but he has fully recompensed us for our laxity (would you call it?) — not in rather our faith and trust in our brother man. Would that you could have enjoyed with us Rev. G. A. Ross' address on "Canadian Literature" and again on "The Home and the School." I shall try to give you a glimpse of that delightful realm of thought.

Our reading has been so successfully tested that on this coming year's programme, names of two more gentlemen appear.

In "Canadian Literature" Mr. Ross says in part:

'The glory of a nation is its literature, for this is the reflection of its character, the sure index to the quality of its life. Themes for a nation's poets are furnished chiefly by an extraordinary history. At least it is the songs which treat of those epochs and events in which a nation has suffered and achieved which take the strongest grip upon the nation's heart. Apart from the literary ability displayed, which is of a high order, the good taste upon the pages of Canadian novels radiate healthy moral aroma, and leave a sense.'

Listen to what the reverend speaker has to say in "The Home and the School." 'The growing efficiency which is characterising modern educational efforts is due to the arrival of a more comprehensive understanding of two matters, First of what education is and second of what the being is who is to be educated. Educational methods have been planned with a view to development, not with the putting of a large catalogue of information into a mind as an end in itself. The child is Nature's seedling of intellect, reason and will. The home is the garden to which it has been transplanted. The work of the teacher is facilitated or hampered according as conditions in the home are wholesome or otherwise.' He warns us that in our homes we should be careful to conserve the influence of the teacher with our children in every possible way.

Now let me tell you of some of the papers relating to housework which have been so helpful to us. "Saving Steps in the Home," written by Mrs.

(Continued on page 506.)

McClary's Blue Flame Oil Stoves make good "Goodies" quickly. No hot summer kitchens. No wicks to trim—no valves to leak—safe, simple, economical, reliable. Costs less than a cent per hour per burner.

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FLORENCE

OIL COOK STOVES

Wickless, Valveless, Blue Flame, Automatic

You can have a slow simmering fire on one burner and a quick hot fire on another and also two others regulated exactly to any heat you want. Just set the letters to exactly the heat you want—you can go away for hours and find all the burners giving exactly the same heat when you come back. That is because the oil supply is automatically kept constant.

A glass bull's-eye always shows you how much oil is in the tank. The upper reservoir holds a gallon.

Ask your dealer to show you the Florence—if he cannot, write to our nearest branch.

GOODY! GOODY!

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Use it for your First Spray and if Not Satisfactory, we will Take it back and No Expense.

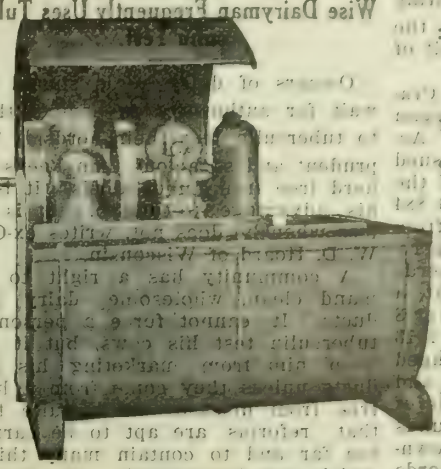
Each machine guaranteed for 2 years against REPAIR.

Each machine will handle 2 lines of hose at 250 lbs. pressure, deliver 6½ gals. mixture a minute and easily apply from 1200 to 1500 gals. a day.

Engine can be instantly released for other POWER PURPOSES, such as sawing wood, etc.

Engine parts interchangeable with "Ford" motor parts. Therefore engine is standard.

I. X. L. JUNIOR Automatic Power Sprayer



The I. X. L. Junior is made in two styles. It consists of a 3¼ H.P. Engine, cypress tank, gear driven vertical cylinder pump, two 25 ft. leads of Hose, two visible spray nozzles, complete in all details.

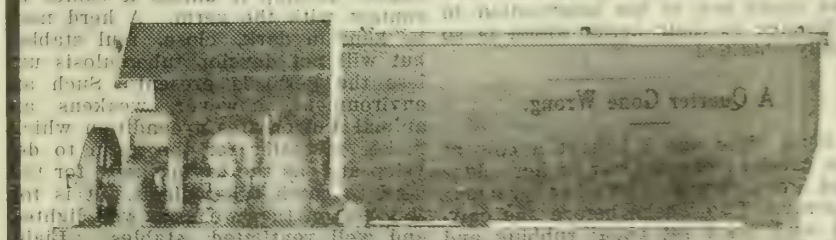
Weight, 450 lbs.

I. X. L. with 100 gallon tank, $165.00
I. X. L. with 150 gallon tank, 170.00
I. X. L. with 200 gallon tank, 180.00

For rough or hilly orchards, common in some parts, the machine which best fills the requirements is our back-mounted.

Pontiac Special

Automatic Power Sprayer



This machine is equipped with the same engine as the I.X.L. and is made with two size tanks.

150 Gallon Tank, 50 ft. Hose, 2 poles $200.00
200 Gallon Tank, 50 ft. Hose, 2 poles $210.00

We have prepared a valuable booklet entitled, "Prize Fruit and Vegetables from your Orchard and Garden," which is free to all farmers, fruit and vegetable growers. Use the coupon and send for your copy to-day.

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Dear Sirs,—
Kindly send me your free book.
Name .....
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Inseparable!

Windsor Cheese Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 175

DAIRYING.

A Word to the Wise is Sufficient

At the Dairymen's meeting held in Charlottetown recently, Mr. George Burgess, Dairy Recorder of Crapaud, who has charge of the cow testing work in that district, submitted the following in reference to the result of his work:

In 1914 sixty patrons of the Crapaud and Tryon creameries began keeping records of their herds. According to annual statements issued by these creameries the herds of the sixty patrons in 1913 average 884 pounds of butter fat per herd; from the 1915 statements, after keeping records only two years, the sixty herds averaged 955 pounds of butter fat, a gain of 71 pounds of fat per herd, or 8 per cent. On the other hand in 1913 patrons not keeping records averaged 503 pounds of butter fat per herd, and in 1915 they averaged 416 pounds of butter fat, a falling off of 87 pounds per herd, or 17 per cent. Had the owners of the herds not keeping records made the same gain in the two years as those who were, it would have meant a gain of twenty-five per cent on what they supplied in 1913, equal to an increase of 58,362 pounds more of butter in these two creameries.

Mr. Chas. J. Cooke, Recorder of the Kensington district, also submitted figures showing equally as good results. Both Recorders report the farmers as taking a great interest in this important branch of their dairy work, which will evidently mean a decided increase in the profits from dairying to all who take up the work and make use of the information in reference to their herds which is so easily obtained.

A Quarter Gone Wrong.

Some time ago I bought a cow at her calving; one quarter of her udder had gone wrong after her previous calving. Two weeks before she calved with me I set about rubbing and milking the quarter, hoping to improve it at least samewhat, and in this I succeeded beyond my expectations. This season I have a similar case, only that I think this is one of longer standing than the first. Can you recommend anything that would be likely to help me in my endeavours? I may say that the teat has been always open, but gave little milk. — Subscriber.

Answer: No, we cannot recommend anything that would be likely to help you in your endeavors, indeed, we strongly recommend you to desist—that is, to drop your endeavors to obtain a partial resoration of function. You will be in a better position than anyone else to judge whether you were sufficiently rewarded for your endeavors in the case in which you say you succeeded beyond your expectation, but our experience is, and it is the experience of the majority of practical cowkeepers, that it is better to have a "lost" quarter, and a "three-papped cow," than to have one with a partially active quarter, with the time and trouble to be expended in getting from it a small quantity of milk that does not pay for taking. To a case of mammitis there are half a dozen possible terminations—resolution, atrophy, induration, suppuration, gangrene, and death of the animal. Resolution, which is far the most rare, is the most favourable termination, since it means complete recovery, or restoration of function. The most common sequelae are atrophy and induration, and in both there may be isolated lobules of the gland which remain intact, and secrete the little milk that industrious dragging at the teat enables the persistent man to extract. When the inflammation has gone, and it is obvious that the secretory power of the larger portion of the gland structure is lost, the experienced cowkeeper what he calls "lets it go," that is, makes no further attempt at milking, and, recognising the inevitable, calls the quarter "lost." In tinkering with cows with defective quarters you will be sure to cause some trouble.—M.R.C.V.S.

Wise Dairyman Frequently Uses Tuberculin Test.

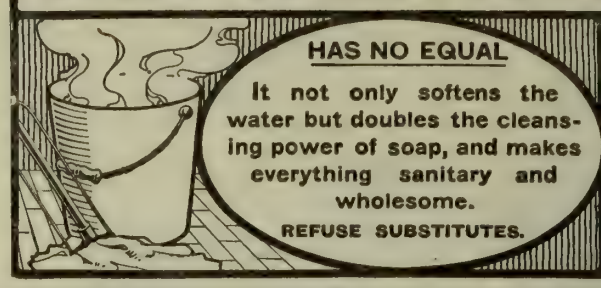
Owners of dairy herds should not wait for authorities to compel them to tuberculin test their herds. The prudent and sagacious man keeps his herd free from tuberculosis. It is to his advantage to do so. It is his loss when he does not, writes ex-Gov. W. D. Hoard of Wisconsin.

A community has a right to demand clean, wholesome dairy products. It cannot force a person to tuberculin test his cows, but it can keep him from marketing his products unless they come from a herd free from disease. It is quite true that reforms are apt to be carried too far and to contain many things which are impractical. It is not possible for a province or a city to send out men to test cows and if reactors are found elminate them from the herd and in this way clean up the diseased animals, unless they have the co-operation of the owners to follow out certain principles necessary to free a herd from tuberculosis.

Perhaps it would be well for us to discuss a few things that should be done and to indicate the limitation of the tuberculin test and the nature of tuberculosis. In the first place, tuberculosis is a germ disease. An animal cannot develop it unless it comes in contact with the germ. A herd may be kept in dark, close, foul stables but will not develop tuberculosis unless the germ is present. Such an environment, however, weakens an animal and creates a condition which makes it easier for the germ to develop and, as the saying goes, for the herd to catch tuberculosis. It is for this reason that we urge well lighted and well ventilated stables. Light destroys germs, and fresh air is necessary for healty cattle.

The tuberculin test is the only diagnostic agent for tuberculosis. It is impossible for a person to elimiate tuberculosis from a herd by physical examination. There are no symptoms which alone characterize this disease. Because an animal coughs is no sign that it has tuberculosis, nor because it is thin in flesh does it follow that the disease is present. On the contrary, an animal may be fat and have tuberculosis. It is unfortunate that tuberculin does not point out the disease during the incubating stages or show animals that are infected. It can be said that when an animal is properly tested with tuberculin and a characteristic rise and fall in temperature follows, there is little question but that the disease is present. Then, too, an animal may be so far advanced with the disease that she will not respond to the tuberculin test. In such cases a physical examination will usually determine the presence of the disease.

GILLETT'S LYE



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By introducing the ball-and-socket spindle bearing to ensure an absolutely self balancing bowl; improving the oiling system and the crank clutch; and perfecting the disc type of skimmer, we have developed in

The "SUPERIOR" Separator

a machine that skims more closely and operates more easily than any other on the Canadian market. The price is remarkably moderate, and a five-year guarantee accompanies each machine.

You will find the book of Superior Separator facts most interesting. Write for it today.

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HINMAN
THE UNIVERSAL MILKER

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$50.00 per Unit. Why?

Because:—It has NO metal pipings, NO gaages, NO safety valves, NO pulsators, NO rubber lining in the teat cups, NO vacuum in the pail. In short, NO COMPLICATION.

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H.F. Bailey & Son, Galt, Ont., Can.

Sole Manufacturers for Canada under HINMAN Patents.

They use Maxwell's Churns in Denmark—

Fancy! Denmark—the great butter-producing country of the world—send all the way to Canada for Maxwell's Churns! Also used in Australia, New Zealand and S. Africa. Convincing proof, this, of the excellence of these well-known churns. Best of all is the—

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"FAVORITE" CHURN (with Bow Lever)

Notice the adjustable handle on the bow lever. No other churn has this. Handle can be moved to centre or either side, whichever is most convenient for driving.

You can buy the "Favorite" in eight sizes. Strongest and best made churn on the market. Easy to work. Gives splendid results. Ask your dealer.

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Guard Children Against Worms.

There is really very little cause for sickness if the proper care is taken to guard against disease. Worms are one of the most dreaded diseases of children.

Signs of worms are: Deranged stomach, swollen upper lip,) sour stomach, offensive breath, hard and full belly with occasional grippings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short dry cough, grinding of the teeth, little red points sticking out on the tongue; starting during sleep, slow fever.

Dr. True's Elixer, the Family Laxative and Worm Expeller, will surely and quickly expel worms. Good for adults also. At dealers, 35c, 50c and $1.00. Advice free. Special treatmetn for tapeworms. Send for bo k.

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Raised on "Purina" CALF MEAL!

ARE your calves growing as fast as you would like? Save milk and money by feeding Purina Calf Meal, the perfect milk substitute, containing 33 per cent. Protein and not less than 4 per cent. Fat. Ask your dealer about the special introductory price. "Purina is put up only in checkerboard bags."

Scientific Feeding Chart sent Free upon request.

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America's Pioneer Dog Remedies

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DOG DISEASES
And How to Feed
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The use of tuberculin in many instances has been misunderstood. It is thought by not a few that if a herd is tuberculin tested and the reactors eliminated, that the herd is clean of disease. This is not the case. There may be several animals in the herd that have been exposed but do not react, for the disease in the incubating stage is not revealed by the tuberculin test. When reactors are found in the herd a retest should be made in six months. It is held by many that when 50 per cent of a herd responds to the tuberculin test it is safe to consider all the herd tubercular, for sooner or later the other 50 per cent are almost certain to develop the disease.

In such instances as this, and where it is desirable to raise the calves of the cows reacting, it is well to follow the Bang System. This system provides for the separation of the young calves and does not permit them to drink any of their mother's milk unless it is pasteurized; that is, heated to a temperature of 150 degrees F. and kept there for twenty or thirty minutes. Care should always be taken to prevent the carrying of the infection from the mothers to the calves.

The question is frequently raised as to whether tuberculin injures a cow. It may be said that the cows on our own farm have been tested for fifteen or more years. Some of the cows at the present time are fifteen years old. They have received tuberculin for thirteen or fourteen years and are still in good health. In all our experience we have never seen any injurious results following the use of tuberculin. Doses forty times larger than is necessary for testing purposes have been given cows before any symptoms of sickness followed. It is understanding these few principles thoroughly and following them out that will in time rid a herd of tuberculosis.

The Testing of Dairy Products

The price of success is attention to detail. This fact is distinctly emphasized in a bulletin recently issued by the Dairy and Cold Storage Branch of the Federal Department of Agriculture under the title of "The Testing of Milk, Cream and Dairy By-Products by means of the Babcock Test" and written by J. F. Singleton, Chief Inspector of Dairy Products. Without being profuse Mr. Singleton tells in plain language about all that is to be told of the practical application of the test, the care that should be taken of the component parts of the apparatus, the measurements advisable and the methods that should be employed. The qualities naturally most emphasized are exactness, cleanliness and temperature. The Dairy Commissioner in his introductory says there is nothing fundamentally new in the bulletin but that the contents are presented with such a clearness of diction and the processes so aptly set forth that the result is a reliable handbook for those who value information on the testing of milk, cream and so on. A number of exact plain illustrations lend additional worth to a notable bulletin, the number of which is 45 of the Dairy and Cold Storage Series, and that can be had by post-free application to the Publications Branch, Department of Agriculture, Otawa.

DE LAVAL
Stands On Its Record

FOR nearly forty years the De Laval Cream Separator has led in the cream separator field. It was the pioneer in 1878. It had a long start and has always held its lead. It has always led in every step of cream separator development and popularity, and more De Lavals are in use today than all other makes combined.

It has always been recognized as the closest skimming cream separator. That's the main reason why 98% of the world's creameries use it to the exclusion of all others.

Because of its cleaner skimming, ease of operation and wonderful durability, every De Laval user is a "booster" and the better its work is known in a neighborhood the more popular it becomes.

The better quality of cream it produces is attested by the fact that De Laval produced cream and butter have scored highest at every annual contest of the National Buttermakers' Association for twenty-four years and in every great representative contest for over thirty years. Last but not least, the De Laval was awarded the Grand Prize at the San Francisco Exposition in 1915 as at every other great exposition since its invention.

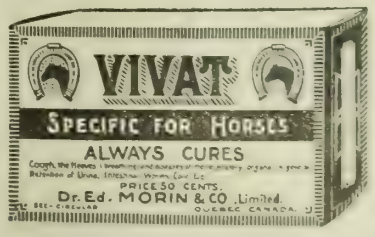
The creamerymen's choice can't be far wrong. The world's greatest dairymen and mechanical experts who act as judges at the great expositions can be depended upon to recognize real merit, and the fact that the De Laval is the choice of the majority of all cream separator buyers must mean a good deal to you. In your purchase of a cream separator can you afford to ignore these considerations?

GRAND PRIZE
Highest Possible Award
PANAMA-PACIFIC EXPOSITION

Let the De Laval start saving cream for you right now. See the nearest De Laval agent at once, or if you do not know him write us direct for any desired information.

DE LAVAL DAIRY SUPPLY CO., Ltd.
MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

The Specific for Diseases of Horses
"VIVAT"



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Well known veterinarians have successfully used it in critical cases. A 50c box will be sufficent for six days' treatment.

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Prevention of Transmissable Live Stock Diseases.

Dr. L. Van Es, North Dakota Experiment Station.

Changed conditions and circumstances are rapidly forcing the Western farmers into a method of agriculture, in which the raising and exploiting of livestock forms an essential part, and, if this stock raising is to fit into the general system of agriculture, the farmer will have to use his brains so as to make his efforts profitable. He is compelled to select his breeding stock intelligently, he must feed so as to obtain the maximum result with a minimum of expenditure, he is forced to watch general economic and market conditions, and apply them to this management, and, last but not least, he must be forever rt with a view to excluding the losses from disease. The importance of the prevention of disease is not confined to the individual stock raiser, but it is vital to every other owner of livestock, because many diseases do not remain confined to just one herd, and it is this general importance which perhaps justifies us to give some thought to preventable disease. The diseases which we wish to include in this series are especially the contagious and infectious ones, as they are the ones which are responsible for the greater amount of loss.

Several years ago, it would have seemed absurd to address a body of farmers on such a subject, because at that time there was no rational base for the prevention of disease. The transmissable diseases were still surrounded by darkness, and it was not until science explained their causes that methods of prevention became possible. The discovery that the causes of those diseases were absolutely specific in their nature, that in other words, one micro-organism could cause but one given disease, and nothing else has enabled us to design ways and means to prevent the spread and introduction of those germs, has caused us to study those various bacteria as to the conditions which are favorable to them and which are not, and above all has made us better acquainted with the phenomenon of immunity and its artificial production.

The Practical Stockman's Part.

The forces available for the systematic prevention and eradication of the transmissible animal diseases are three-fold.

In the first place, we have the man on the farm, the man who is directly interested in livestock. As little as he thinks it, he is the most important factor in the elimination of disease above all others. He can do more towards its eradication than anybody else, because he, in many instances, can refuse admittance of disease to his herds and flocks. He can do so by being careful, by learning just a few simple facts about disease and by learning them well. He need not worry himself about diagnosing the trouble, about recognizing specific lesions, after death and such things; he can leave such problems to be decided by his veterinarian, but he should remember such simple facts as that an infectious disease never does originate spontaneously, that the infection is carried among his herd in some way or other, and he should know and understand these ways, and he should also know where to look for them, while he should always be willing to take a few simple precautions before taking chances.

Take tuberculosis in cattle for example: Here is a disease which actually exists because cattle owners permit it to do so. How? Let us cite the instance of a man who wants to improve his stock or who wants to go into livestock. He will perhaps consult his farm paper and see if any sales are advertised. There usually are, and he proceeds to stock up at one or more sales. He is careful about the animal's breeding, qualities, etc., but in nine out of ten cases he never inquires into the possibility of this animal bein tuberculous. Yet, it is possibly difficult to buy ten such animals without getting one or more infected ones. In many instances such infected animals are turned into a herd without challenge, and the result is that in due course of time something wrong is discovered, a test made which discloses infection in the greater part of the herd. A little precaution would have caused quite a saving in such a case.

Take, again, the disease known as infectious abortion, one of the most damaging diseases to dairy and breeding stock. How often it is caused by the infection of the herd bull by service of cows coming from some unknown source or of cows having a vaginal discharge. Here, again, the vigilance of the owner or the simple refusal of public service could have prevented a very serious loss.

In glanders it is often the owner's neglect or carlessness that is responsible for great losses. Many farmers, even if they know that glanders is prevalent in their vicinity, will, without hesitation, tie their horses in any sort of feed stable or water them from any public drinking troughs that come handy. They will trade or buy horses from the first outfit of gypsies that comes along and are ready to swallow the tale of the new purchase having a "snotty nose" on account of a cold caught in the last rain and the swollen leg being due to "got hurt in the car," that threadbare lie so familiar in the mouth of horse traders. A little care and caution would certainly go a long way toward keeping glanders out of a stable.

Blackleg in cattle is another disease that is nearly entirely handled by the farmer himself. Expensive experience has taught him that when this disease once occurs in a given pasture or field, it is very liable to keep on doing so for many years. He has learned that he must systematically vaccinate his young stock every year and, whether he does this himself or leaves it to his veterinarian, he is the one who must make the initial wound.

There are many other diseases in which, by timely discovery, isolation, disinfection, etc., the farmer himself is the most efficient factor in prevention.

The Veterinarian.

The second forceful factor in the elimination of disease is the practising veterinarian. Scattered over the rural and stock raising sections of the country, he is always in reach of those needing expert advice. He should always be consulted in case of sickness of animals. In cases of any unexplained deaths, he should be engaged to make a careful investigation. In all such instances a properly trained

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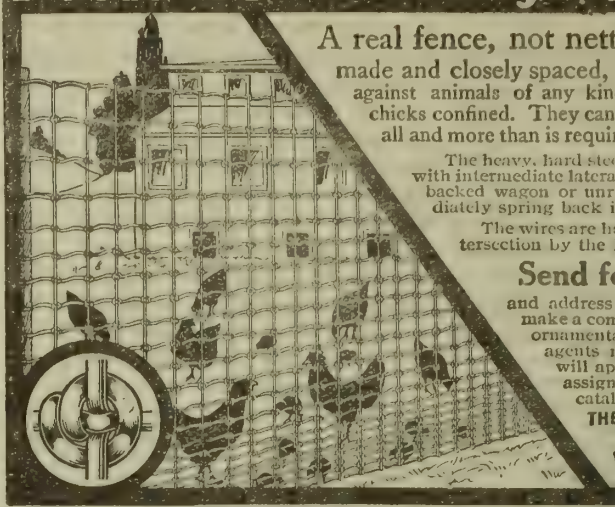

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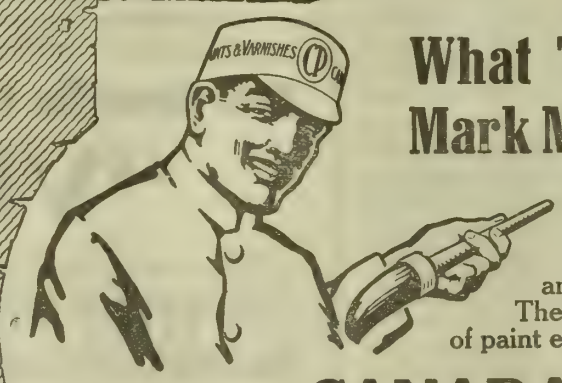

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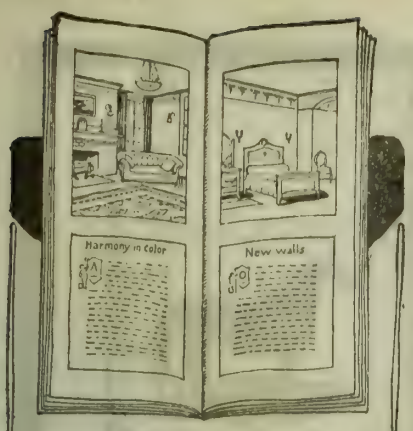

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veterinarian can give reliable advice. Such a man is a valuable asset to any rural community, and stock raisers should encourage him by seeking his services. On the other hand, the veterinarian owes it to his community to keep himself will informed on the subjects pertaining to his profession and on the advances made by science. He must always remain a student, because then only will his value increase as he gathers experience.

His influence, however, is not limited to the giving of advice. Most of the methods of eradication disease require trained workers and supervision, whether they are undertaken by individual efforts or under the auspices of the state livestock sanitary authorities, and for their proper and economic application the veterinary practitioner must be depended upon in many cases.

The Government's Part.

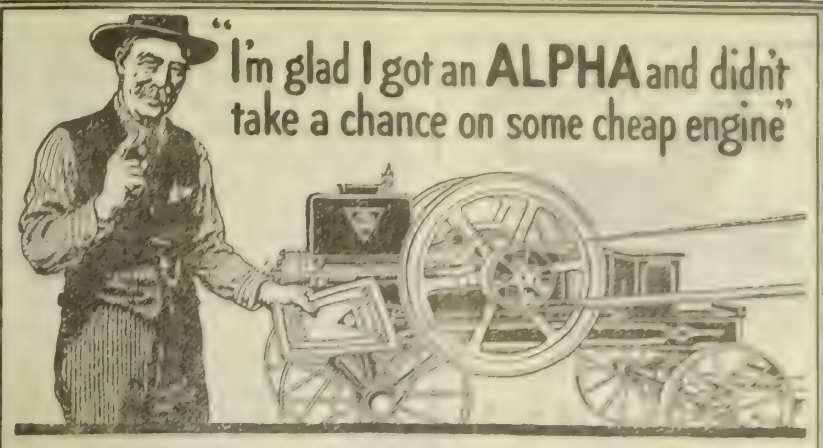
The third power is the Commonwealth itself, because the prevention of disease is pre-eminently a duty of government and the influence of intelligent state action is extremely beneficial.

In order to accomplish good results, however, the state must have at its command an efficient organization operating under laws so constructed that the necessary action can be taken under any circumstances which may arise. The authorities in charge of the work must be given power to make regulations and to enforce them. They should not be hampered by lack of funds.

The best livestock sanitary police organized to fit into such conditions as are found in this country is an appointed sanitary board operating through the executive officer and a staff of assistants. Under its direct function comes the supervision of the movement of livestock into the province or state, the establishment of quarantines in cases of outbreaks of disease and the proper disposal of animals affected with dangerous diseases and of carcasses dead with such disorders. Such an organization should be provided with sufficient funds to enable it to make tests for tuberculosis and glanders without expense to the owners and to undertake the immunization of animals, wherever and whenever this could be done to advantage.

In North Dakota a good working organization has been obtained by the establishment of the Live Stock Sanitary Board some years ago. Since its inception this board has accomplished a great deal for the state. It has brought glanders under control and is well on the way to bring about its complete eradication. It has established a fairly efficient supervision over animals entering the state. It is managing the tuberculosis problem in an enlightened manner and probably by this time its fight against dourine is brought to a successful close.

It is not my intention to sing the praises of this board, but merely to point out that it is an important factor in preventing our heavy financial losses from disease. It is an institution which not only deserves the confidence of our livestock owners, but must have also their full co-operation. Such things as prompt reporting of suspicious cases, a thorough compliance with regulations, orders and suggestions, will have a far reaching result in the prevention of disease.



SOMETIMES a man is tempted to buy a cheaper engine than the Alpha, hoping to save a little money. If you are tempted to take such a chance, it will pay you to first study engine construction carefully. It is only reasonable to assume that if other engines were as good as the Alpha they would cost just as much. Why shouldn't they?

In considering the purchase of an engine, do not let the first cost blind you to the vitally important things you wish to buy in an engine. You want an engine that has plenty of power; that is simple and easy to operate, that is free from weak, complicated, troublesome parts; that is strong and durable enough to give you years of good service. With these things in mind, compare the Alpha, part for part, with any other engine. You will then see that for the slightly higher cost of the Alpha you get by far the most for your money.

Then talk to any of the thousands of Canadian farmers who are using Alpha Engines and they will tell you they are glad they did not take a chance on some "cheap" engine. It does not pay to take chances. Be on the safe side and buy an engine that sells on its merits; that has something more than its price to recommend it.

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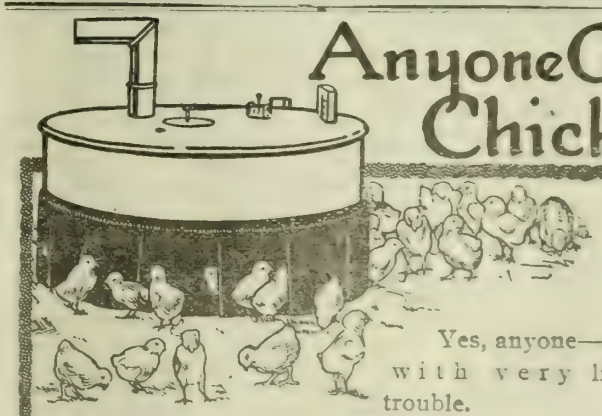

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Bowel trouble need never appear. Pratts is a partly-cooked predigested food—a baby food for baby chicks.

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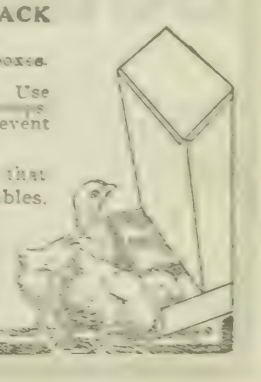

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THE HORSE

Mare With Sweaty Legs

I have a little brown mare, having a lot of straight black hair on the fetlocks and pasterns. From the place indicated in sketch she emits a profuse liquid, not of the malignant form like "grease," but more like sweat, and which, in a few hours, thickens to the consistency of lard. In a few days after washing it begins to shell, and I have hitherto (about once a week) washed it with warm water and carbolic soap, bandaging until dry. There is no sore. When at grass I have difficulty in keeping it from being blown by flies. What would you suggest as being a suitable agent to apply to counteract the sweating, or keep it sanitary? How would the "white bottle," with a little carbolic in it, do?—A.S.

Answer: There are ever so many grades of inflammation of the skin of the heels, or forms or manifestations of "grease," and one of them is the pinkish-white discharge described as causing trouble in your case. There is no doubt but that it may be correctly classed as a case of "grease," and treated according. With reference to this, the suggested employment of the "white bottle" with a little carbolic acid in it, would be eminently suitable. A good recipe for this is 1 oz. each of acetate of lead and sulphate of zinc dissolved in a quart of rain or distilled water. This, although not a chemically correct mixture, is very useful in the form or stage of grease from which your mare suffers. We should, however, strongly advise you to drop the washing of the legs, beyond what is absolutely necessary to remove any accumulation of dried discharge, and to adopt the dry system of cleaning. The case is obviously one of "grease," associated with an inherited, breed, or constitutional predisposition, and in such cases constitutional treatment can advantageously go hand-in-hand with, or supplement, local dressings. An example of medicine that may be useful is : Sulphat of copper, chlorate of potash, and powdered gentian, of each 1 drachm; powdered resin and nitrate of potash, of each 1 1-2 drachms; powdered nux vomica, 20 grains; Castile soap powder, and Venetian turpentine to form a 1 oz. ball. Get a dozen made, and give one every night until exhausted.

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Mare With Lampas

I have a young mare suffering from lampas. Could you tell me the best way to treat her, and cure?—Milkman.

Answer: "Lampas," concerning the character of which exists a great deal if misapprehension, and also needless anxiety, is the name given to a swelling which arises from congestion of the blood vessels in the lining membrane of the palate, the enlargement of the bars being mostly seen in young horses during the process of teething. It occurs occasionally in old horses from irregularities of the teeth, or it may arise in any animal from inflammation set up by bit injuries, but for all practical purposes "lampas" may be regarded as a juvenile trouble, and as the mare in question, said to be "suffering from lampas," is described as young, the probable cause is dental changes. Owing to the inflammation of the gums set up by irritation caused by the eruption of the permanent incisors extending to the palate, it swells and becomes level with or even projects beyond the nippers, and causes feeding to be a somewhat painful business. Colts at grass rarely suffer much, as their food is natural—cooling, tender, and easy of digestion—but the animal that has been taken into work, and fed with hard corn and dry hay, finds mastication painful, and often falls away in condition. Generally, an alteration in the diet to crushed oats and wet bran with scalded chaff, tender green meat in season, or carrots, &c., in winter, at the same time easing the work, will suffice to effect the cure, because in a few days the inflammation and soreness pass away, and the colt can feed again in comfort. In persistent cases, or where the congestion is considerable, and the swelling projects beyond the incisors, all that is necessary is to lightly scarify the swollen palate with a lance or sharp penknife. These superficial incisions result in the flow of a little blood, which promptly relieves the local congestion. A few does of cooling medicine —say 2 oz. of Epsom salts and a little gentian or aniseed—in the soft food once a day soon results in the disappearance of the swelling.—M.R.C. V.S.

Look After Your Horses Teeth and Dodge Colic

There are many different kinds of colic in the horse and impaction colic is one of the most fatal. Impaction colic is caused by improperly masticated food resulting from bad teeth. A horse is said to be as old as his teeth. Occasionally a ten-year old horse is found with such bad teeth that he is already found to be a hard keeper.

The period of usefulness of a horse —and in many cases of his life—may be prolonged several years by proper attention to his teeth. The food that a horse eats is not cooked for him and his grinders must be in almost perfect condition, otherwise he becomes a hard keeper. The teeth should be given attention as often as once a year. It is poor economy to feed a horse all he will eat and still have him in poor condition and capable of giving only a mediocre service in return.

Be merciful to your horse by not neglecting his teeth. He is doing the best he can for you.—H. S. Eakins.

Who Fits the Horse Shoe ?

Many horses have their feet ruined by poor caretakers. In some cases the idea of shoeing is never given a thought and the hoofs are allowed to be their own caretakers. If the animal is stabled or our in soft pasture land the hoofs will grow rapidly with little wear and, when put on the hard road, they crack and break off to the injury of the horse's feet.

It takes very little care to trim off the rough corners and avoid any serious trouble. There are times and conditions that require a horse to be shod to work at his best efficiency.

There is another class of people that shoe a horse and never reset the shoes until they are worn out or lost. To treat a foot properly, the horse should be shod and have the shoes reset every month or six weeks. In the case of young horses that are not mature, it might be well to even reset them oftener. If the horse is off the road for a month or two in summer pull off the shoes and allow him to walk on the bare ground.

If a horse wears shoes continuously, the hoofs will have a tendency to become hard and dry. This can be overcome by applying fish oil to the hoofs just below the hair line twice a week. This will keep the hoofs growing nicely, and as they grow out they will not become quite so hard. This is a part that the owner of the horse can easily look after.

Does your village blacksmith or horse shoer know how to fit and drive a shoe?. In all too many cases with the horse shoer, it is the case of making the shoe and pairing down the hoof to fit it instead of fitting the shoe to the foot.

The shoe is generally fitted too small for the foot. It is nailed on, and the nippers and rasp are used to bring the foot down to the size of the shoe. Yes, it all looks smooth enough, but the wall of the foot has been cut down and removed almost to the quick.

It is far better to round out the hoof, make the shoe to fit it and then knock off the rough edges with the rasp. It may not be quite so neat

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There is nothing more discouraging than Nervous Prostration. Because of the exhausted condition of the nervous system, weakness and helplessness take possession of the body. The faculties of the mind as well as those of the body are affected and hope and courage disappear.

The patient, often appearing well, gets little sympathy, and few doctors understand diseases of the nerves well enough to treat nervous prostration intelligently. Dr. Chase's Nerve Food is founded on the prescription of a great nerve specialist, and hence its wonderful success in curing ailments of this nature.

Mrs. Edith May Williams, Tillsonburg, Ont., R. R. 3, writes: "I cannot speak too highly of Dr. Chase's Nerve Food. I suffered for years with my nerves, and at one time I was confined to my bed with nervous prostration for several weeks. I cannot just explain my feelings, but I was weak and helpless and so discouraged and despondent that I thought I would lose my mind. I doctored with several doctors and received but little benefit. At last I became very much discouraged and thought I would never get better. A friend advised me to try Dr. Chase's Nerve Food, and before I had finished the first box I knew that it was helping me. It took several boxes of the Nerve Food to make me well and I can truly say that it is a wonderful builder-up of the nervous system."

It is only wise to prevent such dreaded diseases as Nervous Prostration, Paralysis and Locomotor Ataxia by keeping the nervous system in good condition at all times. When you cannot sleep well, have headaches and indigestion, be warned of approaching dangers and restore the nervous system by using Dr. Chase's Nerve Food. 50 cents a box, all dealers or Edmanson, Bates & Company, Limited, Toronto.

CONSTIPATION

Is Productive Of More Ill Health Than Anything Else.

If the truth was only known you would find that over one half of the ills of life are caused by allowing the bowels to get into a constipated condition, and the sole cause of constipation is an inactive liver, and unless the liver is kept active you may rest assured that headaches, jaundice, heartburn, piles, floating specks before the eyes, a feeling as if you were going to faint, or catarrh of the stomach will follow the wrong action of this, one of the most important organs of the body.

Keep the liver active and working properly by the use of Milburn's Laxa-Liver Pills.

Miss Rose Babineau, Amherst, N.S., writes: "Having been troubled for years with constipation, and trying various so-called remedies, which did me no good whatever, I was persuaded to try Milburn's Laxa-Liver Pills. I have found them most beneficial, for they are indeed a splendid pill. I can heartily recommend them to all who suffer from constipation."

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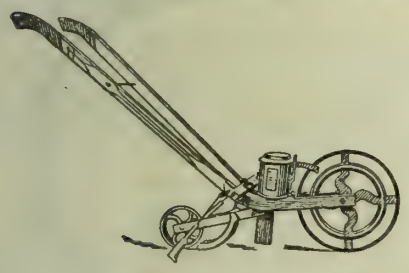

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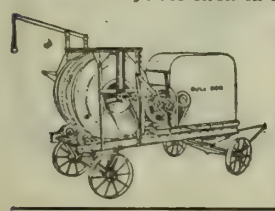

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looking a job, but it will be far better for the horse and the purpose for which it is done.

Unless shod for slippery roads, the calks on the working horse's shoes should be low and dull. This gives the frog a chance to touch the ground and act as a buffer for which purpose it is meant. A little care given the horse's feet while he is young, especially at shoeing time, may lengthen his life of usefulness many years.—J. S. Murray.

Discourage Horse Importations

Even if the European war had not put a stop to importations of Percheron horses from France the action of the directors of the Percheron society of America would do so. The registration fee on imported horses was increased to $100 per head, taking effect July 1. The object sought is to discourage the importation of inferior horses, and it is believed this high fee will have the desired effect. Provision is further made to refund $85 of the $100 paid to importers, on horses that are good enough to win at fairs recognized by the Percheron society.

It is believed this action will effectually bar inferior horses, without interfering with the importation of really valuable animals. It has long been known that we breed as good Percherons in America as in France and in as great numbers. Therefore, the shutting down on importations will work no harm to the breed, but on the other hand will be of benefit to American breeders as it will enhance the value of bred-in-America horses.

Better be Safe Than Sorry

"Is there danger in feeding smutty oats straw to horses," asks a reader. "When we threshed, machinery and men became black from flying smut. I though perhaps there would be no danger in feeding this to horses after it had gone through the blower."

Inquiry among feeders and veterinary authorities does not bring to light definite knowledge of danger. Their advice and ours, however, is not to feed the straw. You are taking too big a chance with valuable animals just to get a little extra feeding value from your crop.

Smut is a parasite. In moderate quantities we would pay no attention to it, but where it is so bad there is danger of various ferments and molds developing that might kill the animals outright, while there is a possibility that the excessive amount of smut spores in themselves might prove injurious.

In badly infested grain there is also a possibility if not a likelihood of ergot, a very dangerous parasitic growth that causes abortion and in advanced cases sloughing off of hoofs. Safety First in feding work horses!

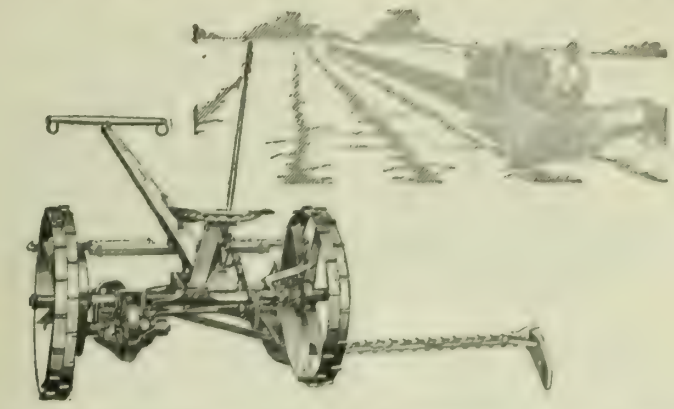
Maybe They Need Work

"My horses are trying to eat the barn," says a farmer. "They gnaw at it and eat big holes in the mangers. I was advised to feed soda in the grain, but it seems to do no good. I feed good clean timothy and oats twice a day and corn at night with carrots and salt once a week."

We don't think there is anything in the soda idea. We have two guesses. One is, that the horses are wormy and the other is that they need exercise. Maybe both guesses are right.

Get a pound of strong smoking tobacco and mix with some bran or other chopped feed as much tobacco as you can get the horses to eat. Let them miss a meal or two before you give them this feed. Afterwards watch for evidence of intestinal worms. Repeat the dose in a week or so.

Get All Your Hay Profit



Once more it is time to prepare for haying. Are your mowers, rakes, side delivery rakes and hay loaders in good condition, ready to get in the whole crop and make money for you in the hay fields? If not, what does your equipment need to make it ready—repairs or new machines?

Get your repair order in early and specify genuine **Deering** repairs for your **Deering** machines. **Deering** repairs are exactly the same as new pieces, made of the same material, from the same pattern. Use them if you want your machines to work like new.

If you need new machines, see the **Deering** local agent before you buy. You know the **Deering** name and reputation. Step in and see the **Deering** mower that cuts clean in all kinds of fields and crops. Ask the agent to show you the new all steel side delivery rakes and the all steel hay loaders that go with the **Deering** line.

Deering machines, this year, are better than ever before. Don't buy until you have seen them, or have received full information from us. Write us at the nearest branch house.

International Harvester Company of Canada, Ltd.

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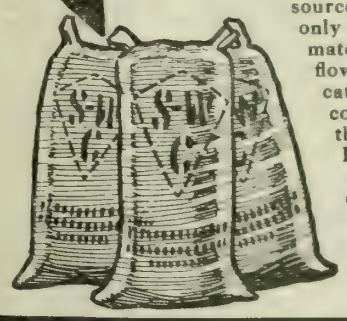
Protein Fed Cows are Big Producers

Protein is the one big essential to healthy stock and a free flow of milk. The cow fed solely with home-grown feed which lacks protein must draw on the reserves of her own tissues and soon "eats her own head off." The profitable food is the ration properly balanced with

S-W. Screw Process Linseed Meal



It contains 36 per cent. of protein and makes your herd a source of revenue to be relied upon. Not only does S-W. Linseed Meal supply the material upon which a rich and generous flow of milk is based but it keeps the cattle in good condition. The big dairy countries of Europe have long realized this. They pay a premium for S-W. Linseed Meal. Write for our booklet and prices. It tells how to feed your cows profitably.

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At Farmer Office, Sussex

Winter Laying Poultry

We introduce the "Barron" strain of White Leghorns to this part of Canada.

The following are extract copies of Mr. Barron's invoices :—

4th January, 1914.

To 12 White Leghorn Pullets bred from a 260 egg hen, and one Cockerel, brother to my little hen that broke the records of Europe, Canada and America with 282 eggs.

21st March, 1914.

To 12 White Leghorn Pullets and three Cockerels from 260 egg pedigree birds.

This is the strain we offer you, backed up by our assurance that during the severest weather of the past winter our birds were making records considerably over the 200 egg mark.

Eggs for hatching, guaranteed off the above stock, $3 per setting of 13. Unfertile replaced at half cost.

Ten strong, vigorous day-old Chicks, guaranteed off the above stock, $3. Twenty Chicks, $5.

Orders for Eggs shipped now. Orders for Chicks shipped in May or earlier if wanted.

Winter Laying Poultry Pay. Our Birds are Guaranteed Winter Layers

M. R. GOLDIE & SON,

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POULTRY

The Day Old Chicken Business.

The day-old chicken has come to stay. There is no doubt whatever about that. For many years past the trade has been extensively carried on in France and on the continent of Europe generally, but it is only within comparatively recent times that much has been attempted in this direction in England and America. It is however, a trade which possesses many distinct advantages, both to the buyer and to the seller. It will be readily admitted by those who have had any experience in the matter that selling or buying eggs for hatching purposes is one of the most unsatisfactory branches of poultry keeping. So many things are liable to happen which will seriously affect the hatching results. The eggs may be broken in transit; during severe weather they may be frosted en route, if they have to travel by train the shaking may do them harm, and affect the chickens when hatched; and, lastly, they may be infertile. As far as this latter point is concerned, it is customary to replace infertiles or return the money, but this by no means compensates for the loss, as in the former case very valuable time may be wasted, and even if the money be returned this does not altogether make up for the loss. When one is buying eggs for hatching only the possibility of chickens can be purchased; no matter what price be paid for the eggs, one cannot ensure obtaining chickens therefrom.

Advantages of the Business.

Fresh blood must be introduced into every poultry yard from time to time, and the purchase of day-old chickens affords a good method of accomplishing it at a comparatively low cost. It is much more economical than waiting till the autumn and then paying from $2.50 to $5.00 per bird. Under these conditions a certain amount of risk must necessarily be run of having a large percentage of cockerels, but they can generally be disposed of at a price that more than pays for the labor and expense incurred. It is essential when purchasing day-old chickens to deal only with a thoroughly trustworthy man, as otherwise the most worthless birds may be sometimes. It is quite impossible at so early an age to distinguish any of their points, and the only guarantee one can have is to buy birds from thoroughly reliable stock. Not only does this trade offer advantages to the buyer, but also to the seller. If one possesses only a small area of land it may be divided up into runs, and stock birds maintained thereupon, the chickens from which can be disposed of as soon as hatched. I know a man who, having only a few acres, has erected scratching sheds and runs, and keeps his holding heavily stocked with pens of Buff Orpingtons, Plymouth Rocks and Wyandottes, all the chickens from which, numbering many thousands, he sells directly from the incubator. The breeders that he requires every autumn to replace the two-year-old hens he buys from among those who have had his chickens. There are several breeders who turn out anything from 50,000 to 100,000 chickens a year, while there is a very large number indeed who sell a few thousand every spring.

Chickens from Matured Stock.

I have heard complaints from time to time that rearing results have not been good with bought day-old chicks. In a number of instances the blame must certainly lie with the raiser, but in others the quality of the chickens sent out may account for the high rate of mortality. I have for a long time held the belief that it is a very serious mistake to hatch eggs produced by pullets during their first laying season, for if the birds have been laying during the three winter months prior to the time their eggs are incubated, the germs in the fertile eggs cannot possess the same vitality, and hence cannot produce such strong chickens. On the other hand, if the pullets have just come into lay the eggs are produced by immature stock, and again the result must be the same. For many years past, when hatching, I have made a point of only incubating the eggs from birds in their second season, and although not obtaining the same number of chickens per bird I have scored in the higher vitality possessed by the youngsters, and rearing results have been very greatly bettered. I believe that if the sale of day-old chickens was confined to the birds hatched from hens that any complaint that are now made would be groundless in the future.

Demand and Price.

I am often asked by those who are contemplating taking up this business which breeds I recommend. The demand, obviously, is likely to be for those varieties that happen for the time being to be creating the greatest public interest. Should White Wyandottes happen to win the twelve-months' laying competition, for instance, one may anticipate an increased demand for chickens of this breed next season. Should Orpingtons prove successful, the increased demand will probably be for them. At the present time the greatest trade among the general purpose breeds is in Wyandottes and Orpingtons; among non-sitters in Leghorns, Minorcas, and Campines; among table fowls in Sussex and Faverolles. The prices charged for day-old chickens depend, in a certain measure, upon the demand for that particular variety. The time of year has also a considerable influence upon the price, and early in the season, when eggs and chickens are scarce, the price is possibly double what it is later in the spring. Generally speaking day-old chickens of a good utility strain realize about twelve or fifteen shillings per dozen early in the season, while cross-breds may be worth seven or eight shillings per dozen. As the season advances prices drop, until similar birds may be purchased in May or June for half the above amounts. Chickens for exhibition stock are worth a good deal more, but I am not concerned with such birds, and am referring only to good utility stock.

Treatment Before Dispatch.

The chickens, when hatched, are allowed to remain in the incubator until quite dry, when, if they are going only a short journey, they are packed and sent away without receiving any food.

"Odd Furniture will Fit in"

Says Mrs. Goodwife.

"The prized heirloom, that odd but dainty design of former days, can be renewed and made to fit in any modern home with a coat to match of

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More Potato Profits

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IRON AGE

potato machines but have room here for one only. **Potato Planters** put one piece in every space and only one. Isn't it better to plant right, to make every foot of ground count and none of the rest of the work wasted? Saves one or two bushels of seed on every acre. Sold with or without fertilizer distributor. Other potato machines are *Riding* and *Walking Cultivators, Four* and *Six Row Sprayers* (also one with low nozzle for trees), *Potato Planters* and *Ridgers*. Also makers of famous Wilkinson Plows.

Ask your dealer to show them but write us for separate book for each line. Sent **Free** to all who state in which they are interested. How many acres are you going to plant?

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We also make *Garden Tools* for practical farmers and *Sprayers* of every kind.

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Riding Cultivator

Potato Sprayer 4 or 6 Row

Potato Ridger With Disks if wanted

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Under sixteen years of age

May enter the

POULTRY CLUB COMPETITION

which opens in May

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Minard's Liniment Co., Limited.

I was very sick with Quinsy and thought I would strangle. I used MINARD'S LINIMENT and it cured me at once. I am never without it now.

Yours gratefully,
MRS. C. D. PRINCE.
Nauwigewauk, Oct. 21st.

IN WAR OR PEACE

it is the trained man who leads.

This school makes a specialty of training young men and women to fill responsible, good paying positions. Prepare yourself for one of these by taking a course at the

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Booklet describing our courses of study sent on application.

If the journey is more than a few hours' duration, it is better to teach them to feed before sending them away, so that they can eat during the journey. Some prefer to keep them about a week before despatching them, but I have always found it to answer better to send away as speedily as possible. If the chickens become accustomed to a brooder they do not readily take to another, and the change is liable to give them a check and retard development. Curious as it may appear, chickens travel better when twenty-four hours old than when a couple of days, and every day after they feel the effects more keenly. Should the weather be very severe it is, perhaps, better to keep them a week before sending away, as at this age they are able to withstand the extreme of temperature better.

How to Pack the Chickens.

The box in which the chickens travel requires to be well and substantially made, as no artifical heat can be supplied to them during the journey. The best form is one made of inch boarding lined throughout with felt or flannel, with a thick layer of hay or straw in the bottom. It should be placed upon four small legs or feet, in order to ensure dryness, as dampness would prove fatal. A few small holes should be pierced around the top of the sides, so as to provide the necessary ventilation. There should be a small window on one side, otherwise the chickens will be in darkness, which, during a long journey, would prevent their eating. The lid of the box should either screw on or be tied, on no account nailed, as the hammering has a very injurious effect. During cold weather it is a good plan to hang strips of flannel from the top of the box, under which the chickens can nestle. The size of the box depends, of course, upon the number of chickens there is to occupy it, but no more room should be provided than is necessary. A convenient size for a dozen chickens is 12 inches by 8 inches, by 6 inches high. The hay with which the box is littered should slope slightly towards the centre, in the form of a saucer, so that the tendency will be for the chickens to keep away from the outer walls.
—E. T. Brown, in exchange.

A Good Motto.

A colored gentlemen entered his store to buy a pair of blankets. He was interested in two pairs, one at $4, the other at $6, and the dealer was pointing out the fine points of the better article. The purchaser replied that he had only $4, whereupon the salesman suggested that he could take the $6 pair and pay the difference later on. The reply of the colored man was this: "No, suh, I never hangs my hat higher up den I can reach."

Now there's a whole sermon in the philosophy of that man, and you don't need any person to expound it, either. Extravagance is contagious, and the insane desire to "keep up with the neighbors" may have much to do with a lot of trouble, the blame for which is laid elsewhere.

If there is a sorry spectacle it is when the family with a $1,500 income tries to make as big a splash as the one next door that has $5,000 a year to come and go on.

The motto of the colored man is well worth remembering, and also practicing: Never hang your hat higher than you can reach.

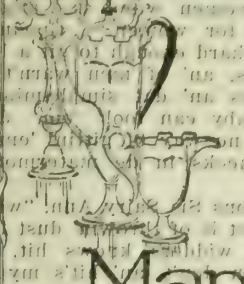
For the unsightly scaly legs, a mixture of lard, sulphur and coal oil will clean them up nicely. It will kill the parasites that are the cause of this rough development. After two or three applications, the legs should be thoroughly washed with castile soap and warm water, and then dried carefully with a warm cloth to prevent the fowls taking cold.

June Weddings

A Wedding Present is just a little different from any other gift. There is a sentiment attached to it, that remains for a lifetime.

Those who are going to make some June Bride the happiest girl in the world, will like to feel that their gift has durable quality and intrinsic merit, as well as the sentiment of remembrance.

Those who choose their gifts from the Mappin & Webb Catalogue, are sure of obtaining the quality that endures.



Mappin & Webb are the largest manufacturing Silversmiths in the British Empire—and one of the two or three great Jewellery Houses of the world. They are Silversmiths by appointment to His Majesty, King George V.—and have stores in London, Paris, Rome, Nice and other foreign cities, as well as in Montreal.

If you have a Wedding Present to buy, write us today and we will send forward the new Mappin & Webb catalogue, free and postpaid.

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Ask your dealer to show them and write us for booklet "Garden Toys With Modern Tools." Also, for horseshoes, harrows and cultivators, sprayers, etc.

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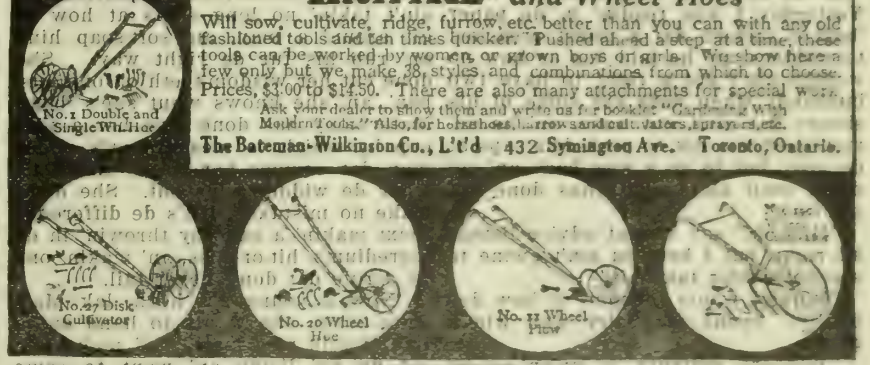

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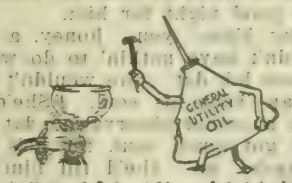

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Mirandy on Widows

By Dorothy Dix.

Sis Sairy Ann is one of dese heah onappropriated blessins whut would make any man a good wife, an' dat ev'y man dat knows recommends to ev'y odder man, but don't grab off for hisself, las' night she come to my house an' she aint mo' dan set herself down comfortable in a rockin'-chair befo' she says to me, "Sis Mirandy, is you done heah dat de Widder Johnsing is gwine to be married again?"

"De lan' sakes!" sclaims I. "You don't say so- Marryin' is done got to be sech a habit wid dat woman dat she can't break herself of hit, fo' dis is de fo'th man she done toled to de altar."

"Dat's right," spons Sis Sairy Ann, gittin mo' an' mo' mounrfuller, "an' hit's my opinion dat dere ought to be some way to have de law on dem women whut's a runnin' a matermonial trust, an' a snatchin' de weddin'-rings right offen our hands, so to speak, an' makin' hit so dat no matter how hard an' industrious us po' single women wuks at catchin' a husban', we can't git one."

"Dat's so," puts in Ma'y Jane, whut's still a roostin' on de anxious seat outside of de fold of matermony, "but de chuch is comin' to our help. Yesterday I was readin' in de paper 'bout a sermon dat a priest preached to widders, an' he told 'em as how no woman ain't got a right to have two husbands when dere are some of his sisters dat ain't got none, an' he admonished 'em not to perk deir caps at de men, but to go a way back an' set down ontil all de gals has done got married."

"Humph," say I, "dat advice listens all right, but I bet you ain't gwine to see no widder take hit."

"Whut I wants to know is how dey do hit," spons Sis Sairy Ann wid a groan.

"Widders suttenly is up-an'-comin' folks," says Ma'y Jane.

"Dere ain't no odder nation of people dat's got de hustle to 'em dat widders is," spons I. "Looks lak dere's somethin' in losin' de partner of yo' bosom dat puts pep an' ginger into you. Why, wid my own eyeballs I's done seed a woman whut's been dat puny an' sickly she ain't been able to lift her han' to cook a meal's vittals, or do a day's washin' fo' ten yeahs, an' de minnit she got to be a widder she git dat filled wid git-up-an'-gitness dat she was able to chase down a able-bodied man, an' ketch him."

"Widders sholy is dangerous," says Ma'y Jane, "an' ef men had de sense dat Gawd promised de fishin'-worm, dey'd run ev'y time dey seed one of dem black veils bearin' down on 'em."

"Shoo, chile," says I, "don't you look for gumption 'bout love in men, for ef you does, you's gwine to be disappinted. De Lawd didn't give men no sense 'bout women, which is a mighty lucky thing for women. Goodness knows, hit's hard enough to git a husban' as it is, an' ef men warn't as blind as bats an' dat simple-minded dat a gal baby can fool 'em, dere wouldn't be no way of gittin' 'em to put deir necks in de matermonial halter."

"Well," spons Sis Sairy Ann, "whutever de secret is of throwin' dust in a man's eyes, widders knows hit, an' single women don't, an' hit's my belief dat hit's a conjer, fo' widders ain't no better lookin', nor no mo' straight fronter, nor no sprier, nor no better cooks dan us ole maids. Yet dey can marry all aroun' us, an' git fo' husbans apiece, whilst de balance of us ain't got none. You needn't tell me dat hit's de widders' superior cahrm. Hit's de way dey wuks deir rabbit-food. Hit's de conjer."

"Naw, Sis Sairy Ann," says I, "hit ain't de conjer. Hit's experience. De ole maid des guesses at whut a man likes, an' how to please him, but de woman whut's done been through de trials an' tribulations of matermony ain't takin' no long shots at how to git aroun' a man, an' soft-soap him, an' rub his fur de right way. She done cut her wisdom-teeth on one husban', an' she knows whut she's 'bout. Matermony has done give her a pint cup by which to measure ev'y odder man dat comes her way. An' dat's whar de widder wins out. She don't make no mistakes. Hit's de difference twixt makin' a cake by throwin' in de ingrediums, hit-or-miss, an' makin' one by a rule dat don't never fail.

"Now a young gal heah, lak Ma'y Jane, when she wants to hand out a line of talk to a man she'll make him set up an' listen an' want to come back again, converses wid him 'bout de books she's been a readin', an' de state of his soul, an' highfalutin things lak dat. An' de man gits de fidgets, an' most goes to sleep, an' when he shuts de front do' behin' him, hit's good night fer him.

"But bless you, honey, a widder wouldn't have nothin' to do wid foolishness lak dat. She wouldn't talk to a man 'bout his soul. She'd know from pussonal observation dat a man ain't got much soul, for he's mostly stomach, an' she'd fill him up on fried chicken, an' chicken-fixings, an' he'd be back de nex' night. Hit ain't high-browed talk dat makes a hit wid a man. Hit's fust-class cookin'.

"Anodder reason why de widder can always cut out a man always to be a-handin' out compliments to her, an' tellin' her how beautiful she is, an' whut a gran' figger she is got, an' dat she suttenly does perambulate lak a fashion-plate.

"Now de widder has done found out from matermony dat a man takes a mighly luke-warm interest in anybody but hisself, an' dat whilst he can converse 'bout hisself an' his job, an' his bicycle, an' his dog to de Judgment Day, an' have a puffectly gran time doin' hit, hit don't take him long to git tired an' frazzled out talkin' to a woman 'bout de things dat she's interested in.

"Darfore a widder kin' of waves away de flattery when a man begins to praise her, an' she des' rolls up her sleeves an' gits busy handin' out de soft talk to de man, an' tellin' him 'bout how big an' handsome, an' strong, an' noble he is, an' whut a gran' job de Lawd turned out when He made him. An' dat does de trick. A gal dat is tryin' to make a hit wid a man sholy does turn out raw wuk when you compars hit wid de professional, polished performance of a widder.

"Den anodder reason why men prefers widders is becaze a man says to hisself dat de widder is broke to double harness, an' dat ef he marries one, he's gwine to save hisself all de trouble of teachin' a skittish gal not to shy at ev'y bugaboo in married life, or a balky one not to git stubborn an' refuse to pull ev'y time she gits riled 'bout somethin' dat don't please her, or one dat's inclined to bolt to stay in de middle of de road. Yassum, a man says to hisself dat some odder man has done fit all dem matermonial fights out wid de widder, an' he won't have to have de bother of doin' hit ef he harries her, an' so dat's why he ups an' pops de question.

"An' he's right. A widder is used to puttin' up wid de cantankerousness of a husban', an' she don't expect a man to be de pin-feathered angel an' romantical hero, rolled into one, dat a young gal thinks she's gittin' wen she gits married. An' a widder is a lots more peaceable wife dan a young gal is. When her husban' don't git home of an evenin' on time, she don't have de high strikes, an' whilst she may meet him wid a rollin'-pin in one hand an' a flatiron in de odder, after de family ruction is over, she'll put him to bed, an' put wet cloths on his haid in place of washin' him away wid a flood of tears, an' de threat dat she'll go back home to her maw or go to co't an git a divorsch.

"An' dat ends de matter, for widders is done found out dat a man can do a lot of sidesteppin' an' still be a mighty good proposition to tie to. Furdermo' a widder dat marries a man don't worry an' nag him none 'bout wantin' to know whedder he loves her or not as long as he brings home his pay-envelop. An' mo dan dat, mos' women kills off deir fust husbans learin' to cook, an' so de man whut marries a widder saves hisself from gittin' dyspspsy. I tell you dat widders is a gran' matermonial risk, an' I don't blame no man for marryin' one."

"I don't see whut widders want to marry agin for," says Ma'y Jane. "Looks lak a woman whut's done had one husban', an' insurance money, ought to be saterfied, an' give some sister woman a chanst."

"Well," spons I, "I specs widders an' widowers both marry agin for de same reason, an' dat is becaze hit's kin' of lonesome not to have nobody to knock yo' faults an' quarrel wid when you has been used to dat diversion. Hit sort of takes spice out of doin' anythin' not to have nobody object to hit nor fight wid you over hit. You misses yo' sparrin' partner, an' you can't be happy ontel you gits anodder one."

"De Good Book commands us to wipe away de tears from de widder's eyes," says my ole man Ike, whut had been a listenin' to de confabulation.

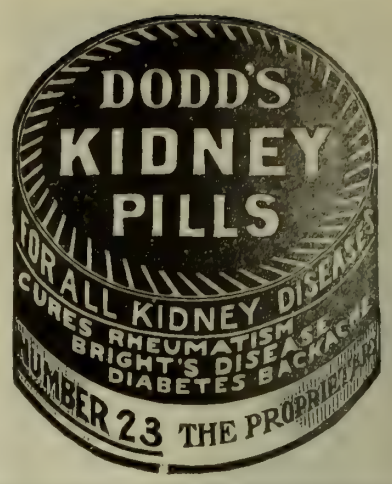
"Well," spons I, "I reckon dat's 'bout de mos' dangerousest job that any man ever ondertook, an' don't you dast try hit when I's dead an' gone."

Our Flag.

"The flag that has braved a thousand years the battle and the breeze."

From the earliest times banners and flags were used and carried by nearly every nation and tribe; these flags or standards were not only carried on land by the soldiers, but were also used at sea on ships and vessels, the flag on the mast showing clearly the nation to which the vessel belonged.

England was one of the first countries to have a navy and display the national flag on her ships. It is unnecessary to trace and describe all the flags used by England during the early centuries, but if we consider the origin of our present flag, the Union Jack will perhaps be enough. As the basis of this flag is the red cross of St. George it might be well to make some mention of his life. St. George was born about 270, in Palestine, in the Vale of Sharon, celebrated for its roses, and so the rose is the national flower of England. He was a Christian and was put to death as a martyr on April 23, 303. It is told that he fought and killed a fierce dragon, and thus saved a Princess from death, so St. George is always represented in his combat with the dragon, he being on horseback, carrying a red cross on white ground. This cross became the national flag of England and was the



"I DON'T SUFFER ANY MORE"

"Feel Like a New Person," says Mrs. Hamilton.

New Castle, Ind.—"From the time I was eleven years old until I was seventeen I suffered each month so I had to be in bed. I had headache, backache and such pains I would cramp double every month. I did not know what it was to be easy a minute. My health was all run down and the doctors did not do me any good. A neighbor told my mother about Lydia E. Pinkham's Vegetable Compound and I took it, and now I feel like a new person. I don't suffer any more and I am regular every month."—Mrs. HAZEL HAMILTON, 822 South 15th St.

When a remedy has lived for forty years, steadily growing in popularity and influence, and thousands upon thousands of women declare they owe their health to it, is it not reasonable to believe that it is an article of great merit?

If you want special advice write to Lydia E. Pinkham Medicine Co. (confidential), Lynn, Mass. Your letter will be opened, read and answered by a woman and held in strict confidence.

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

DOAN'S KIDNEY PILLS

Relieve The Kidneys and Bladder Like Ordinary Medicines Do The Bowels.

When the kidneys get out of order the back is sure to become affected, and dull pains, sharp pains, quick twinges all point to the fact that the kidneys need attention.

Plasters and liniments will not cure the kidneys, for they cannot get to the seat of the trouble, but Doan's Kidney Pills do, and cure the kidneys quickly and permanently.

Mrs. Lizzie Melanson, Plympton, N.S., writes: "I am sending this testimonial telling you what a wonderful cure Doan's Kidney Pills made for me. For years I had suffered so with my kidneys I could hardly do my housework. I used several kinds of pills, but none of them seemed to be doing me any good. At last I was advised to try a box of Doan's Kidney Pills. When I had taken the first box I found relief. I have used five boxes, and to-day I feel like a new woman. I cannot recommend them too highly."

Doan's Kidney Pills are 50c. per box, 3 boxes for $1.25, at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

When ordering direct specify "Doan's."

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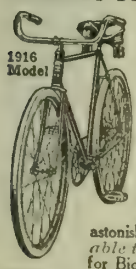

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10 DAY'S TRIAL. If owner is not entirely satisfied after riding any Hyslop Bicycle 10 days it can be returned and money will be promptly refunded.

TWO CENTS is all it will cost to write us a postal and we will mail free, postpaid, catalogue and colored art folder showing *complete line* of bicycles, tires and supplies and particulars of *most marvelous offer* ever made on a bicycle. You will be astonished at our low prices and *remarkable terms*. MAKE MONEY taking orders for Bicycles, Tires and Sundries. DO NOT BUY until you know what we can do for you. Write to-day. **HYSLOP BROTHERS, LIMITED** DEPT. 50 **TORONTO, ONT.**

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T. W. BOYD & SON,
27 Notre Dame St. West, Montreal.

ground work from which the present Union Flag has been built.

The cross of St. Andrew was joined with the cross of St. George in 1606 by King James I. St. Andrew is supposed to have been the first to introduce Christianity into Scotland. His anniversary is kept up by the Scotch on the 30th November. In the year of 987 the Scots were attacked by the English under Athelstane, there appeared in the sky the night before the battle the cross of St. Andrew formed in the white clouds against the dark blue sky, at the battle the English were defeated and their king was slain; since then the cross of St. Andrew has been adopted by the Scotch as their national flag; the St. Andrew's cross is a diamond cross, white on dark blue ground. This flag was carried by Robert the Bruce, whose descendants, the Earls of Elgin, still bear his banner; it was also carried at Bannockburn when the Scots were victorious over the English. The Scotch flag was carried principally on land, as the Scotch never made any pretentions of having a navy.

The origin of the flag called Jack cannot be clearly accounted for.

There was no change made in this flag until the year 1707 in the reign of Queen Anne when the union of England and Scotland and their parliaments became an established fact, so it was necessary to have one flag to represent the union.

The drawing of the new Union Jack of Queen Anne shows quite a difference from that of King James. This flag continued to be used for nearly one hundred years until Ireland came into the union in 1801.

St. Patrick from very early times has been the patron saint of Ireland; born in Scotland near the close of the fourth century (authorities differ as to the exact date of his birth).

He went to Ireland when a young man and devoted himself to Christianity and labored incessantly among the people, suffering many hardships.

He founded monasteries, churches and schools, was afterwards made a deacon and priest, and finally a bishop.

It is certain that he did a great lot of good for the Irish, and in as much revered as their saint by them as St. George by the English or St. Andrew by the Scotch. St. Patrick's Day, March 17th, is always especially celebrated by the Irish. There is no early record of this flag being carried in battle by the Irish, and they were never a nation fond of the sea, but it is quite certain that the Irish cross was in some way connected with St. Patrick.

The St. Patrick's cross is the same shape as St. Andrew's, but a red cross on a white field.

Thus we have the three flags in one Union Jack, the flags of England, Scotland and Ireland.

The part of the flag next the flagstaff is called the hoist, the outer part the field or fly; flags are generally hoisted at eight o'clock in the morning.

They are lowered to half mast as a sign of mourning, but should then be only the width of the flag from the top of the flag to staff.

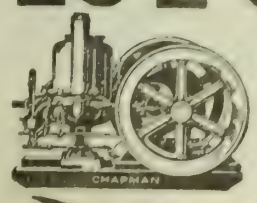
Salutes are made at sea by dipping or lowering the flag and then raising it, and in this connection it may be interesting to note that all nations are the first to salute British ships at sea as a recognition that Great Britain is "Mistress of the Seas."

"You may call it an old bit of bunting,
You may say it's an old colored rag,
Yet freedom has made it majestic,
And time has enabled the flag."

MAMIE I. RYAN,
Sussex.

Makes It Pay

Farming pays. It pays better than any other investment. The way to make it pay easier and bigger than ever is to get our mechanical farm helps to do more of your work at reduced cost. This requires POWER and it requires MECHANICAL EQUIPMENT, but power equipment is what "makes it pay." We offer the best in our lines at most reasonable prices.



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Do you remember how our fathers used to toil 20 hours a day, for weeks, to get the harvesting done? That was when the harvest was cradled and bound by hand. You no longer hear of gleaning all night by the light of the harvest moon. The reaper and binder have changed all that. The ordinary chores in farm life have lost their drudgery too. Pumping water for house and barn, grinding feed, pulping roots, churning, washing, and cream separating, are not done by hand any more. Gasoline engines or windmills furnish power to turn machinery and pump water. We manufacture and supply nearly all the helps needed to make farm life easy: Saw Frames, Grinders, Silos, Silo Blowers, Well Drills, Pumps, Water Systems, Litter Carriers, Windmills, Engines, etc.

TORONTO Windmill A perfectly balanced easy running mill, geared and steady power for pumping. The TORONTO Windmill has self-adjustment to prevent racing in high wind. Requires oiling once a month.

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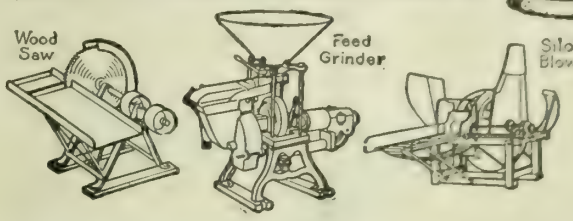

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Ontario Wind Engine & Pump Co., Ltd.
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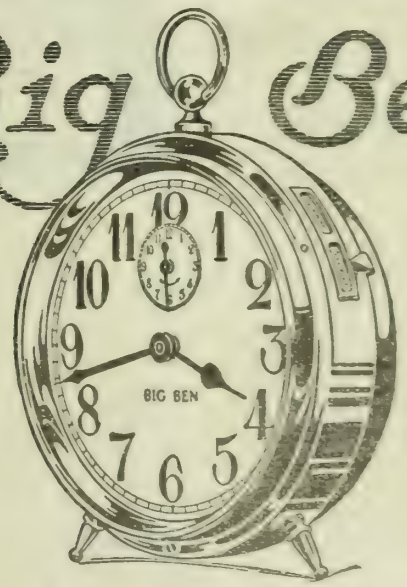
Big Ben



Just As a *Clock*

If he didn't have an *alarm* in his make-up he'd be the best three dollar *clock* that ever kept track of the day on any farm.

As it *is*, he's *two good clocks in one*—a reliable alarm to get up by, a punctual timekeeper to serve in parlor, dining room, or kitchen. He goes quietly about his work—you hear him only when he calls.

Handle him with reasonable care, — he'll last for years.

7 inches tall. Price $3.00 at your dealer's. If your dealer hasn't him, send a money order to his makers and he'll come direct by parcel post, all charges prepaid.

Western Clock Co.
La Salle, Ill., U.S.A. Makers of *Westclox*

Ten Sanitary Commandments For Rural Schools.

In every school which may be considered passably sanitary the following condition shall obtain;

1. Heating by at least a properly jacketed stove. (No unjacketed stoves to be allowed.) Avoid overheating. Temperature should never go above 68F. There should be a thermometer in every school room.

Ventilation by open windows when wether permits and by opening of windows at frequeut intervals even in winter.

Lighting from left side of room (or from left and rear through winow space at least one-fifth of floor spacc in area.

3. Cleanliness of school as good as in the home of a careful house keeper.

4. Furniture sanitary in kind, and easily and frequently cleaned.

Seats and desks adjustible and hagienic in type.

5. Drinking water from a pure source provided by a sanitary drinking fountain.

6. Facilities for washing hands, and individual towels.

7. Toilets and privies sanitary in type and in care (with no cesspools unless water tight)and no unneglected privy box or vanlts.

8. Flies and mosquitoes excluded by thorough screening of schoolhouse and toilets.

9. Obscene and defaceing marks absolutely absent from schoolhouse and privies.

10. Playground of adequate size for every rural school.

Bread and Cereals.

The cereals or grain products, buckwheat, corn, rice, rye, oats and wheat, furnish for the majority of people more nutriment than any other type of food material. It is estimated that they furnish more than two-thirds as much protein as all other food materials together.

They are especially valuable as energy producers and as one of the cheapest sources of protein. They also contain a very small proportion of refuse,are palatable and digestible,easily prepared and preserved.

As an arcticle of food for children and invalids,they are indespensable.

Thorough cooking of cereals is a factor of prime importance. It not only makes the ceaeal more palatable,but breaks down the cell walls of indigestible cellulose which surrounds the starch,grains and other nutriens,thus making them easier to digest.

Wheat is the most importent cereal because of its bread.making qualities. The two common classes of wheat are the "soft" or winter wheat and the "hard" or spring wheat. As a rule, the hard wheat contains more protein, while the soft wheat contains more starch

However, the amount of potein does not necessarily determine whether a flour will make good bread or not. The chief pretein in wheat flour is called gluten and is made up of two compounds, gliadin and glutenin. The proper proportion of these two compounds present in gluten as well as a fairly high glut. en contents, makes a good bread flour. It is the gluten in the wheat which has the property of stretchnig and expanding and which makes the framework of the bread,since it retains the air and carbon dioxide and hardens when baked. A good bread flour is creamy in color aud has a characteristic granular feeling and a high persentage of gluter. . A combination of winter and spring wheat is usually considerated the best for bread-masing.

Score-card for judgeing bread:

Flavor. 35; lightness 15; grain and texture,20;crust, 10:total, 100.

The flavor is determined by taste and color. Bread should have the good, nutty sweet flavor of the grain. A sour or yeasty smell is not allowable. Lightness is determine by the relation of size and volume. The bread should be neither overlight nor underlight, Grain and texture are jupged by the finess and tendernass of the loaf. There should be an even distribution of the

Nervous & Sleepless

Take 2 Tablets at Bedtime and you will arise feeling Refreshed, Bright & Vigorous.

When you feel gloomy and depressed and cannot sleep, suspect your nerves. When you shrink from company and would rather be alone you are losing confidence in yourself, and that can only mean weak nerves. It is not natural to be solitary and unsociable, it shows clearly that vitality has become reduced, and the nervous system correspondingly weakened. But take Dr. Cassell's Tablets for such a condition and you will be astonished at the results, astonished at the bright new health you will gain, at the splendid vigour and vitality they will give you.

Mr. Poole, a business man of 60, Infirmary Road, Sheffield, England, says :—"I had lost all confidence in myself, and was actually afraid to meet people. The alertness and activity I had formerly possessed were gone. My digestion was feeble, and sleeplessness was terrible. But when I commenced taking Dr. Cassell's Tablets I soon felt better. Now I am as well and fit as any man of my age."

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised modern home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co , Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five War Tax Extra, 2 cents per tube.

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SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my free ten days' trial of a home treatment suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men cannot understand women's sufferings; what we women know from experience, we know better than any doctor; and thousands have proved there is hope even for the hopeless in my method of home treatment, if you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you are cured, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old. To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Then accept my generous offer, write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

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make the meals so much more tempting—as well as much more healthful and less expensive.

But of course for a really successful garden you need the very best seeds. So it's worth while to see that you get

Ewing's Reliable Seeds

They have produced 44 successive crops in Canadian gardens and fields—they have rarely disappointed—and have so often pleased beyond all expectations.

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SEED MERCHANTS
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must, to a great extent, take the place of men in Banks and Business Offices, but why should they be expected to do so without the training the men have had?

We equip women for doing as good work as the men.

Our Catalogue gives the cost and full particulars. Sent free to any address.

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STRAWBERRY PLANTS.

All the best varieties at reasonable prices. Send for price list.

JOHN N. CHUTE,
Berwick, Nova Scotia.

gas, making fine and uniform holes.

No heavy streaks should occur. the crust ehould be even, yellowish brown in color, about one-fourth of an inch in depth, and should be crisp. The crumbs should be creamy in color, neither excessively dry and crumbly nor doughly. The loaf should be shapely and small enough to be thoroughly cooked. — Frances R. Freeman, in Maine Farmer.

Home Nursing.

There are few women who are not called upon at some time to care for the sick. The importance of goods nursing cannot be overestimated. In many cases the recovery of the patient depends more upon more upon the care in nursing and in following the doctor's instructions than in medical skill.

Nursing is not done by instinct, although instinct often helps, but it is done by thorough knowledge.

The things necessary for health are: (l) Pure air—for impure air brings about a devitalized condition of the body, which makes it susceptible to disease; (2) sunshine and light; (3) proper food, which has been well cooked and thorouguly masticated; (4) rest, recreation and exercise; (5) cleanliness.

In the sick room, good air should be had day and night. This should be carefully adjusted to avoid direct drafts. As much sunlight should be let iato the rooms as the patient can stand, but it should be prorerly tempered to suit each individual case. Sunlight increases the vitality of the patient and decreases the vitality of disease germs.

The temperature of the sick room should be a little lower than in any ordinary lividg-room. In certain diseases, such as pneumonia typhoid fever and tuberculosis, the windows are kept wide open.

Cleanliness is absolutely essential, both in the sick room itself and in the personal care of the patient

For this reason, dust-collecting non-essentials should be taken out of the room. Quiet and cheerfulness are necessary to help the patient to recovery.

The common symptons of illness, or of any abnormal conditions in the body, are: Headache, acking back and limbs, nausea, coated tongue, diarrhoea, cough irritability of temper and listlessness, sore throat, or fever. If any of these are observed in members ot one's family some step should be taken at once to relieve the condition. A safe thing to do is to give a hot bath and put the person to bed, following this treatment with a dose of castoroil, if necessary. If any symptoms does not yield at once to home treatment, a good doctor should be consulted. This saves time and strength and often money.—Dorothea Beach, in Maine Farmer.

Patient—Doctor, what I need is something to stir me up—something to put me in fighting trim. Did you put anything like that in this prescription?

Doctor—No You will find that in the bill.

These Fifty Men

would be required to do the work that the Martin Ditcher and Grader will do in one day.

Any good Farmer knows that draining is one of the most profitable improvements that can be made on his farm, but it is usually difficult and expensive to get men or machinery to do it.

You can do as much ditching in one day with the MARTIN DITCHER AND GRADER as *50* men could do with picks and shovels and do it better.

Every Farmer in Canada should have

The MARTIN Farm DITCHER and Road Grader
(PATENTED)

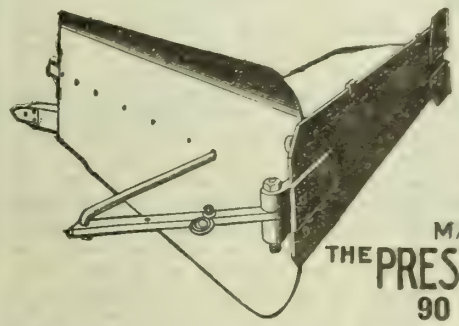
In fact he *cannot afford* to be without it.

It will cut ditches to a depth of two or three feet.

It will dig tile ditches and cover them up again.

It is unexcelled as a Road Grader—or for levelling land—making irrigation ditches, etc.

And the Price is only **$47.50**



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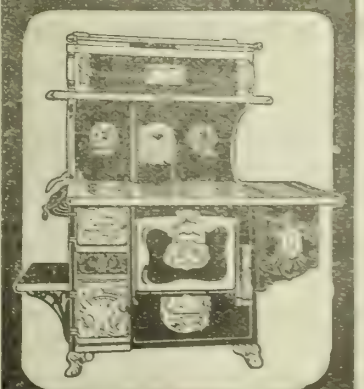
and the controller damper. makes cooking almost automatic,

TRIPLE BODY, REMOVABLE RESERVOIR, ROOMY WARMING CLOSET and a dozen other unique and original MONARCH features.



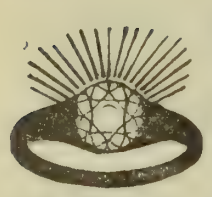
You cannot work without proper tools

Any important occupation requires proper equipment. Just as the farmer needs his farming implements and the mechanic his tools, so the housekeeper requires a first-class range. Here is one of the finest ranges made in Canada, the

Enterprise Monarch Steel Range

A *guarantee* goes with every MONARCH *sold*. An artistic and interesting booklet will be sent if you write to us mentioning this advertisement.

ENTERPRISE FOUNDRY CO.,
Sackville, N. B.



GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1-$2-$3 Weekly.
We trust any Honest Person. Write for Catalogue to-day.
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

FOLLOW THE BLUE PRINT TRAIL.

Business occupations are an open book to the one who is trained, just as intelligible as the architect's blue print is to the contractor. As a graduate of our school, you have the knowledge and power to choose a business which will produce the most money for you. Knowing where you are going, knowing the process by which you can win out, gives you confidence and courage to stick until you are successful.

It pays to attend the

Moncton Business College,
Geo. J. Schmidt, Principal
Moncton, N.B.

Profits in a Suit of Clothes.

The cost of a suit of clothes from the back of a sheep to the back of a man is computed in the Tariff Board's report on wool as submitted to Congress last week, and the profits which accrue in the process are traced to their sources.

For the purposes of computation the board takes a suit of clothes retailing at $23 and wholesaling at $16.50. This is said to represent fairly the suit of clothes worn by the average American.

The farmer receives for the wool in such a suit $2.23, and his profit is 68 cents; the manufacturer of cloth receives for his product $4.78, and his profit is 23 cents; the wholesale clothing dealer receives for his product $16.50. and his profit is $2.18; the retail clothing dealer receives $23, tnd his profit is $6.50.

Angus W. McLeod Tells of His Luck.

FRIEND CALLED AND TOLD HIM OF DODD'S KIDNEY PILLS.

He Found a Cure for the Rheumatism That Crippled Him, and Has Never Since Had a Twinge of Pain in Limbs or Body.

Tarbotvale, Victoria Co., N.S., May 8th. (Special.)—Cured of rheumatism that had crippled him, Angus W. McLeod, well known and highly respected here, feels it his duty to let everybody know that he found his cure in Dodd's Kidney Pills.

"Last fall," Mr. McLeod states, "I took sick with a severe attack of rheumatism. The rheumatic pains lodged in the small of my back and left hip.

"I could feel darts of pain shooting through my loins liks shocks from a galvanic battery, and in two days I was a cripple. I was obliged to limp around with a stick, and I looked slewed to the right side because I could not let my weight on my left foot.

"I suffered in this way for a week, when luckily a friend came to see me who recommended Dodd's Kidney Pills. Before I had finished the second box the pain was entirely gone.

"I have since been exposed to cold and wet every day, but I haven't had a twinge of pain in my body or limbs."

Dodd's Kidney Pills cure rheumatism by removing the cause. They put the kidneys in shape to strain all the uric acid out of the blood. With no uric acid there can be no rheumatism.

Pork Cake a Good Substitute for Fruit Cake

Pork cake is a very good substitute for fruit cake. It is moist, keeps well and requires no butter, milk or eggs. The recipe:

1 pound fat salt pork.
1 pint boiling water.
2 cups sugar.
1 cup molasses.
1 teaspoonful soda.
1 teaspoonful cloves.
2 teaspoonsfuls cinnamon.
1 pound currants.
1 pound raisins.
1-4 pound citron.
flour.

First prepare the fruit. Wash and .ry the currants. Wash, seed and chop the raisins. Shred the citron. Have the pork entirely free from lean and rind. Chop very fine or put through the food chopper, using the finest cutter. Pour the boiling water over the chopped pork, add the sugar, mix the soda with the molasses and add the molasses. Mix the spices with part of the flour and stir into the mixture. Add the fruit and then the rest of the flour.

amount of flour is given but the batter should be as thick as one can stir. It is well to try a sample cake as one seldom uses enough flour the first time.

Bake in a moderate oven from three to four hours, depending on the size of the pans used, or steam three hours and bake one.—Charlotte E. Carpenter.

To Render Down Pork, Bacon or Other Fat.

Remove from it every scrap of lean meat (which should be put in to boil down for a stock or gravy), cut or chop the fat small, put it then in an iron saucepan, and cover with cold water. Bring slowly to a boil, skim off any scum that rises, then boil the whole very fast—without a lid—till all the water evaporates, that is, when the liquid is a clear oil. The operation take from two to three hours, but it must be watched or it will burn. When all the water has evaporated as stated, the pan must be drawn to the side of the fire so that the fat may go on melting at a very low heat. It must on no account be allowed to brown, and it should be frequently stirred. When the pieces of fat become shrivelled and crips it is ready. Draw back the pan and let the fat cool a little (boiling fat poured into earthenware will crack it), then strain it through a cheesecloth. In rendering down "flead" (pig's fat) or beef flare, water should not be used. Take off merely the thin skin, cut the fat up small, and put it into a brown earthen jar. Half fill it into a brown with boiling water, put in the jar when the water boils up, and boil fast during the whole time it is on the fire. Pour the melted fat gently into stone jars. Put the remains of the fat again on the fire, boil, and then pour off, but do not mix this with the first lot, if you do the lard will not keep so long.

How to Dress Hot-House Lambs.

Leave the hide on. Cut open carcoss from the neck to the hind leg—don't cut through the hind quarters, as the meat is apt to turn dark. The entrails should be properly cleaned out. Bladder must be removed. Leave nothing but kidneys during hot weather. During cold weather liver and heart and kidneys can be left in. Back-set the hide and draw the caul fat over the back-sets. Leave head and feet on. Lambs should weigh not less than 20 lgs. When too small they are not wanted.

As lambs are received mostly in the spring, and sometimes in early summer, when weather is hot and sultry, accompanied with frequent thunder

Get a Frost & Wood Mower

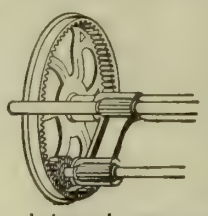
Use a cranky, wasteful out-of-date mower and you may throw away a whole season's hay. These are the days for efficiency. Make a wise expenditure for a Frost & Wood Mower, and you save in crop, in horse flesh, in time, in money.

Hay-Time is Money Time on the Farm

Frost & Wood Mower Cuts Any Crop

IT WON'T FAIL YOU.—It's a light draft machine. The splendid roller bearings and easily controlled levers eliminate friction and make it easy for a boy or girl to use. Immensely strong, with heavy brass bushings where wear is greatest. Heavy high-carbon steel cutter bar can be set in a second at any angle. Knife guards are high-grade tough malleable iron. The F. & W. is a splendid, serviceable mower, always ready for hard work, even with "green" help.

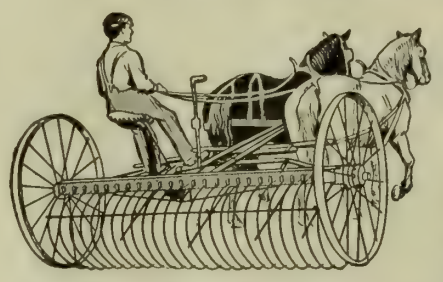
Space prevents reference to the many splendid features of the Frost & Wood Mower, but the "Internal driving gear" as shown here must be mentioned. The driving gears are meshed on the inside of the main drive



Internal gear drive means big power

—travel in the same direction—no tendency to fly apart, or to snap cogs—no loosening or rattling of parts and connections, and the knives begin to cut at the first step of the horses. This means quicker work and longer life to the machine.

Frost & Wood Rakes



Built for Hard Quick Work

Because a Rake looks a simple machine to make don't put up with cheap, inferior workmanship—get a F. & W. and save real money. Teeth of special quality, tempered steel, and arranged in convenient sections of two or three. Self-dumping, discharging load automatically at light pressure on foot lever. Made of steel, amply strong, clean working, the F. & W. Rake gives a lifetime of splendid service.

Our nearest agent is ready to give you full particulars and advice on this or any implement, or write to-day to our nearest branch or head office for illustrated catalogue.

FROST & WOOD CO., Limited,
MONTREAL, SMITH'S FALLS, ST. JOHN

Farmers and Wool Growers
ATTENTION!

We are open to buy any quantity of Washed and Unwashed Wool, paying the highest Market Cash Prices.

We pay freights to Humphrey's Station on all lots of 100 pounds or over.

On application we will be pleased to furnish current rates.

J. A. HUMPHREY & SON, Limited,
MONCTON, N. B.

storms, shippers should be careful and allow the carcasses to cool off thoroughly before shipping, as they turn green very readily about the kidneys, and many lambs become almost worthless in consequence.

Country shippers should exercise more care before shipping. It would not be a bad idea to allow the lambs to be quiet and restful before killing, and then after killing allow the lambs to cool off properly and allow all animal heat to pass out of the body.

Business as Usual at G.T.P. Passenger Station, Montreal

Since the recent fire, traffic continues to be carried on without inconvenience or delay to the travelling public.

The temporary ticket-offices, baggage and waiting rooms are fully staffed and business is going on expeditiously. Trains are operated with customary regularity.

Larger accommodations to take care of the usual increase in traffic as the season advances will be ready in a few days.

Passengers using Bonaventure Station and the trains of the Grand Trunk Railway System are assured of the same satisfactory and courteous service as hitherto.

Time tables and descriptive literature, of the Grand Trunk Railway System will be supplied on application to J. H. CORCORAN, Travelling Passenger Agent, Moncton, N.B.

Waterproofing Boots.

Put one pound tallow and half pound resin in a pot on the fire. When melted and mixed warm the boots (they should be dryand clean) and apply the hot stuff with a painter's brush, until neither the sole nor the upper leather will take up any more.

If it is desired that the boots should take a polish, melt an ounce of wax with a teaspoon lamp black, and some day after the boots have been treated with tallow and resin, rub over them this wax in turpentine, but not before the fire. The exterior will then have a coat of wax alone and will shine like a mirror.

Tallow or any other grease becomes rancid and rots the stitching as well as the leather, but the resin gives it an antiseptic quality which preserves the whole.—Mabel Page, New Hampshire.

Sealing Catsup Bottles.—When making catsup try tying waxed paper over the necks of the bottles tightly, then dip the tops in melted sealing wax. Your catsup will keep splendidly, besides the paper is more satisfacthan corks.

Catching Mice.—It may be some housewives are bothered with mice and are tediously baiting traps and placing them at points where the mice have been working. By locating the hole where the rodents made their entrance into the room and then placing an unbaited trap with the trigger end tight against the baseboard or wall they will be caught nearly every time.

Removing Scortched Spots. — If a piece of white goods is scorched while ironing it the discoloratian can be immediately removed by rubbing over it a cloth dipped in diluted peroxide.

If you wash matting with salt water it will pverent it from becoming dark colored.

—Removing Hot Dish Marks.—To remove these marks from furniture take equal parts of linseed oil and turpentine, rub on the wooden top. This removes the white stains. Where the surface is highly polished try a thin solution of olive oil and salt, spreading it over the mark left. Leave it there for one hour before polishing with a dry cloth.

For the home where there is no Gas

This is the first combination coal, wood and OIL, stove ever offered. It is 3 stoves in 1.

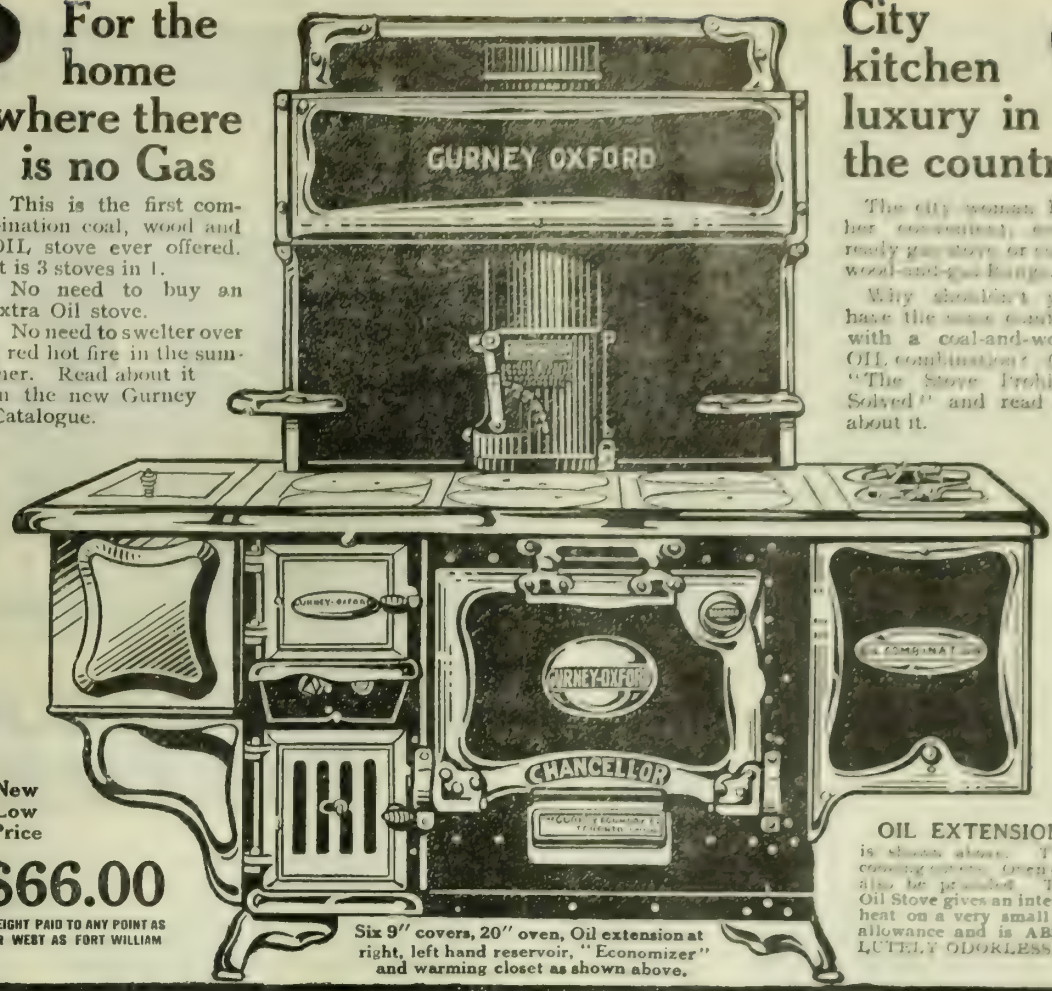
No need to buy an extra Oil stove.

No need to swelter over a red hot fire in the summer. Read about it in the new Gurney Catalogue.

City kitchen luxury in the country

The city woman has her convenient, ever ready gas stove or coal-wood-and-gas range.

Why shouldn't you have the same comfort with a coal-and-wood OIL combination? Get "The Stove Problem Solved" and read all about it.



New Low Price

$66.00

FREIGHT PAID TO ANY POINT AS FAR WEST AS FORT WILLIAM

Six 9" covers, 20" oven, Oil extension at right, left hand reservoir, "Economizer" and warming closet as shown above.

OIL EXTENSION is shown above. Two cooking covers (extra) can also be provided. This Oil Stove gives an intense heat on a very small oil allowance and is ABSOLUTELY ODORLESS.

This Chancellor Oil Combination is a wonderful new creation

In one splendid range are combined the finest coal and wood range, the Chancellor, with the best Oil stove built. It's the one great, new advance in stoves in the last 50 years. It's the one satisfactory all-year-round cook stove.

The Gurney-Oxford Chancellor is the finest possible product in the stove world to-day. Its beautiful blued-steel construction, ruggedly braced for many years of work, with hand-set steeple headed rivets, rich but simple nickle trims, makes it a beautiful sight in any kitchen. Everything about the "Chancellor" bespeaks the aristocrat in stoves.

Our patented system of dividing the flues *compels* the fire to heat every cover alike and, further, guarantees that every inch of the oven gets the same heat, producing splendid, even baking, not for a while or now and again but *always* and for a lifetime.

The "Economizer," a patented draft-control, is a wonderful feature. You can turn the heat off and on with a turn of the handle. No bother with dampers. Gives exactly the heat you want for any cooking or baking. Saves you a full ton of coal in 5. Holds a coal fire for 36 hours.

Fire box, special design, is fitted with unique Duplex Grates that get the utmost heat from the fuel you wish to burn, either wood, hard or soft coal.

The warming closet, broiler top and the beautiful enamelled surfaces all *lure* one to cook on the finest Range built, especially as prices are now lower.

The Oil Extension is every whit as satisfactory. You can use it at the same time as the main stove if desired. Special construction guarantees no oil smell. The white enamelled chimneys concentrate the intense heat and permit no waste.

Large, level, table-like top very handy in any kitchen, yet the "Chancellor" Combination Oil is compact and takes less room than two separate stoves. Also, you get 100 days after buying to decide whether you'll keep it or get your money back. Could you be protected further?

New Catalogue "The Stove Problem Solved" Get it

A splendid guide to stove buying compiled from 70 years' successful experience in making quality stoves. Gives complete particulars of the "Chancellor Oil Combination" above and also of the complete line of Gurney-Oxford Stoves, Ranges, Heaters, Gas Stoves, Boilers, etc., etc., and quotes new, low freight paid prices all through. There is a copy ready for you, *Free*. Send for it to-day. 57

GURNEY-OXFORD The Gurney-Massey Company Limited, 169 St. Paul Street West, Montreal, Que.

Also at Toronto, Hamilton, Winnipeg, Calgary, Edmonton, Vancouver.

FULLY IDENTIFIED.

"But I don't know you, madam," protested the paying teller, to a woman who had presented a cheque. The woman, instead of replying haughtily, "I do not wish your acquaintance, sir," merely gave him a glassy smile, and said:

"Oh, yes, you do. I don't need any one to identify me. I'm the 'red-headed hen' next door to you, whose 'imps of boys' are always running across your garden. When you started to town this morning, your wife said: Now, Henry, if you want a dinner fit to eat this evening, you'll have to leave me a little money. I can't keep this house on Christian Science.'"

"Here is your money," interrupted the paying teller, faintly.—Kansas City Journal.

Features Gleaned From the N. B. Women's Institute Reports

(Continued from page 491.)

Stuart Fiske, Quebec, who only a short while ago, was closely connected with Macdonald College, Quebec, gave our housekeepers, nay homemakers, many ideas of ways and means whereby household difficulties might be overcome together with the salvation of time and strength. A paper on "Bacteria and Its Relation to Foods," was carefully prepared for us by Miss Beulah Phillips, a graduate in Household Science at Mount Allison. Truly the old saying, 'Everyone must eat his peck of dirt' does not belong to the 20th Century housewife.

A paper on "The Advisability of Partonizing Home Industries" written by Mrs. Herbert Kilpatrick, awakened many of us to the opportunities lying close at hand which ought to be taken advantage of. Mrs. Kilpatrick has also given us a splendid paper on "Obedience in Children." Discipline always, but discipline wisely. Another paper which proved very interesting was "Should a Wife Know Her Husband's Business?" which was well prepared and given by Mrs. Atkinson. In the words of Tennyson's Princess,—"Everywhere two heads in council, two besides the hearth, two in the tangled business of the world, two in the liberal offices of life." Many more subjects might I mention, but time will not permit.

To help digest these literary feasts, we have music and cheery readings. The roll call is usually answered when possible by quotations bearing on the month in question, as Valentine quotations in February, Irish quotations or jokes in March, Patriotic quotations in May, etc. Right here let me mention that in March we enjoyed a pleasant evening with Miss Jonah, who instructed us in "The Care of a Typhoid Patient." At many of our meetings refreshments are served by committees appointed for that purpose, and on "Gentlemen's Evening," when the programme is prepared especially for them, each member helps to provide for the inner man.

Truly war has waged its wide desolation during the past year. Homes have been destroyed, lives sacrificed, for what—to satisfy man's greed for gain and furthermore to crush out that greed. We think our time precious to us. What of that? Were not the lives sacrificed at the battles of Marne, Ypres and St. Julien precious too. Much have those lives done for us and the most we, snug in our comfortable homes, can do is small recompense.

Florenceville Society admits it has done very little, but the coming year, I can assure you, will see much done. Knitting socks and the making of hospital shirts and pajamas have kept our members quite busy during the past months. Twenty Dollars was raised by the sale of 'Allied for Right' buttons and forwarded for the Women's Institute Motor Ambulance Fund. Out of funds on hand, consisting of fees, proceeds of sale of refreshments at our annual pic-nic in July, amounting to $30.50, $7.05 our share of the Carleton Masonic Lodge contribution, $6.65 another share we received from a generous neighbour merchant's week's sale of goods together with our government allowance, 50.00 was voted to join an Institute Machine Gun fund. This, however, has been cancelled and the money is still on hand ready to be devoted to whatever worthy object is presented to us.

"The will to do and the will to dare
Are what we want to-day.
What has been done can be done again,
For the will finds out the way."

Glassville. — Organized September, 1913. Membership then 8, now 23. Refreshments served at the close of each meeting are provided by a committee of four, appointed at the preceding meeting. This branch had a printed programme last year, but so many demands for money during the war the programme this year was typed. Annual pic-nic greatly enjoyed by the members and their families. Money has been raised from sale of ice cream and suppers. Contributions were sent to the Patriotic and Ambulance Funds, and food and clothing to the Belgians. Many helpful ideas obtained from the Canadian Home Journal, taken by several of the members. Two members from this branch took advantage of the Household Science Short Courses held at Woodstock by the Department, and were able to share their knowledge with the other members at the monthly meetings of the Institute. Last year the Women's Institute had a special exhibit at the local Agricultural Exhibition.

Hartland. — Organized September, 1913. Membership at present, 24. Papers on such subjects as "First Aid to the Injured," "The Early History of

LIFE INSURANCE FOR YOUR HOUSE

Unpainted wood means decay. Not to paint your house, means constant expense for repairs. Paint protects against wear and weather. When you take out our "100% Pure Policy", your house is insured against decay. Such paint protection resists the destructive effects of climate and temperature, besides adding beauty and distinction to the home and value to your whole property.

MARTIN-SENOUR "100% PURE" PAINT

means life insurance for your home. The genuine White Lead, Oxide of Zinc, Pure Colors and Linseed Oil—ground to extreme fineness by powerful machinery—form a combination that protects against decay.

"100% Pure" Paint makes protection sure. It spreads easily, covers completely and is the cheapest in the end because it covers more space per gallon. In all colors for spring painting.

Write for a copy of our amusing book, "The House That Jack Built." It's full of pictures, rhymes and reason, that you will enjoy as well as the children. We'll also give you the name of our nearest dealer-agent.

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ADDRESS ALL ENQUIRIES TO

The MARTIN-SENOUR Co.
LIMITED
655 DROLET STREET, MONTREAL.

MARTIN-SENOUR PAINT

MARTIN-SENOUR SPAR FINISHES

Spraying Pays

SAVES your crop from loss, helps tree and plant to produce better and larger crops, prevents spread of disease, insures a longer life for trees and a longer growing time for vines, each year. Blight hit potatoes in many states in 1915—many million bushels lost. Spraying would have saved them.

IRON AGE Sprayers

Include bucket, barrel, power and potato sprayers in many sizes and variety of equipment to suit each man's needs. We want to show you what each one is, how they are made and what they will do. Ask your dealer to show you these tools and write us for booklet describing all of them fully. We also have a spraying guide which we are glad to send.

The Bateman-Wilkinson Co., L't'd 434 Symington Ave. Toronto, Ontario.

Also Potato Machinery, Garden Tools, Fertilizer Distributors, etc.

FOR SALE BY
J. CLARK & SON - FREDERICTON, N.B. AND WOODSTOCK, N.B.
THE LOUNSBURY CO. - - - - - - - - - - - - NEWCASTLE, N.B.
BLIGH & PRINCE - - - - - - - - - - - - - TRURO, N.S.

Canada," "Our National Anthem," "The Value of Self-Control," "The Proper Ventilation of our Homes," and many others of varied interest have been read from time to time. Two hundred and forty pairs of socks and other useful articles have been sent to the soldiers. One of the important undertakings in this branch was the installing of seven gasoline street lights. Funds for their upkeep were raised in the following manner: Concert, $57.00; Tag Day, $62.63; Food sale, $16.00; Auction in connection with a Patriotic Pic-nic, $116.00. The local Lodge of the Knights of Pythias donated $50.00 to further encourage and show their appreciation of the local improvement undertaken by the Institute.

Upper Kent. — Organized October, 1914, with a membership of 15. Work almost entirely confined to assisting the soldiers. As a result of a Social, $30.00 was forwarded to the Soldiers' Disablement Fund. Printed program not in evidence, but at each meeting program for the following meeting is arranged. Sociability and interchange of ideas has been encouraged by the Institute.

Woodstock. — Organi ed February, 1915, with a membership of 38, which has since increased to 80. Meetings held in one of the lecture rooms in the new Vocational Buliding. At one of the meetngs Rev. Mr. Smith, a social service worker of Ontario, gave a very interesting account of the Ontario Women's Institutes. The meetings have been most instructive and interesting —the subjects taken up covering most phases of women's work in the home. A lesson on dressmaking,—a paper on the Cuts of Meat and the Most Nutritious Method of Cooking Them,"—Demonstrations in the making of Angel Cake, Potato Flouna Cake, Sherbet, Date Whip, etc., have made the regular monthly meetings an event to which all look forward with much pleasure. At one meeting a local butcher brought a side of beef, cut it, told the members the proper names of each part, and the prevailing prices of the different cuts. Other helpful addresses were given by Dr. Grant, on "First Aid," and Mrs. Chester O. MacDonald on "What a Woman should know about Banking." A "Clean Up" day was held in April, when the aid of the Boy Scouts, some of the clergymen, and the local newspapers, the town of Woodstock was made a bit more beautiful. The Musicale, given free of charge, during the month of June, was an unqualified success. neither expense nor labor was spared in order that the public might enjoy an evening of music. Twenty-nine Dollars and Sixty-six Cents, the receipts of Button Day, considerably swelled the N.B.W.I. Motor Ambulance Fund. Another place where Institute members are also Red Cross Members, but realizing that too much work cannot be done for the soldiers, the Institute handed over the Red Cross Society 85 pieces, and no doubt will continue in this noble work. To the picnic held in July, the husbands of the members, and the Boy Scouts were invited.

(Continued next issue)

When there is no head to the top of the Flour barrel, what do you know about the contents? Nothing!

But when you see that the top bears the "REGAL" label, you are sure you are getting good flour, which carries a money-back-guarantee of satisfaction that insures you against baking failures.

THE ST. LAWRENCE FLOUR MILLS CO., LIMITED
MONTREAL

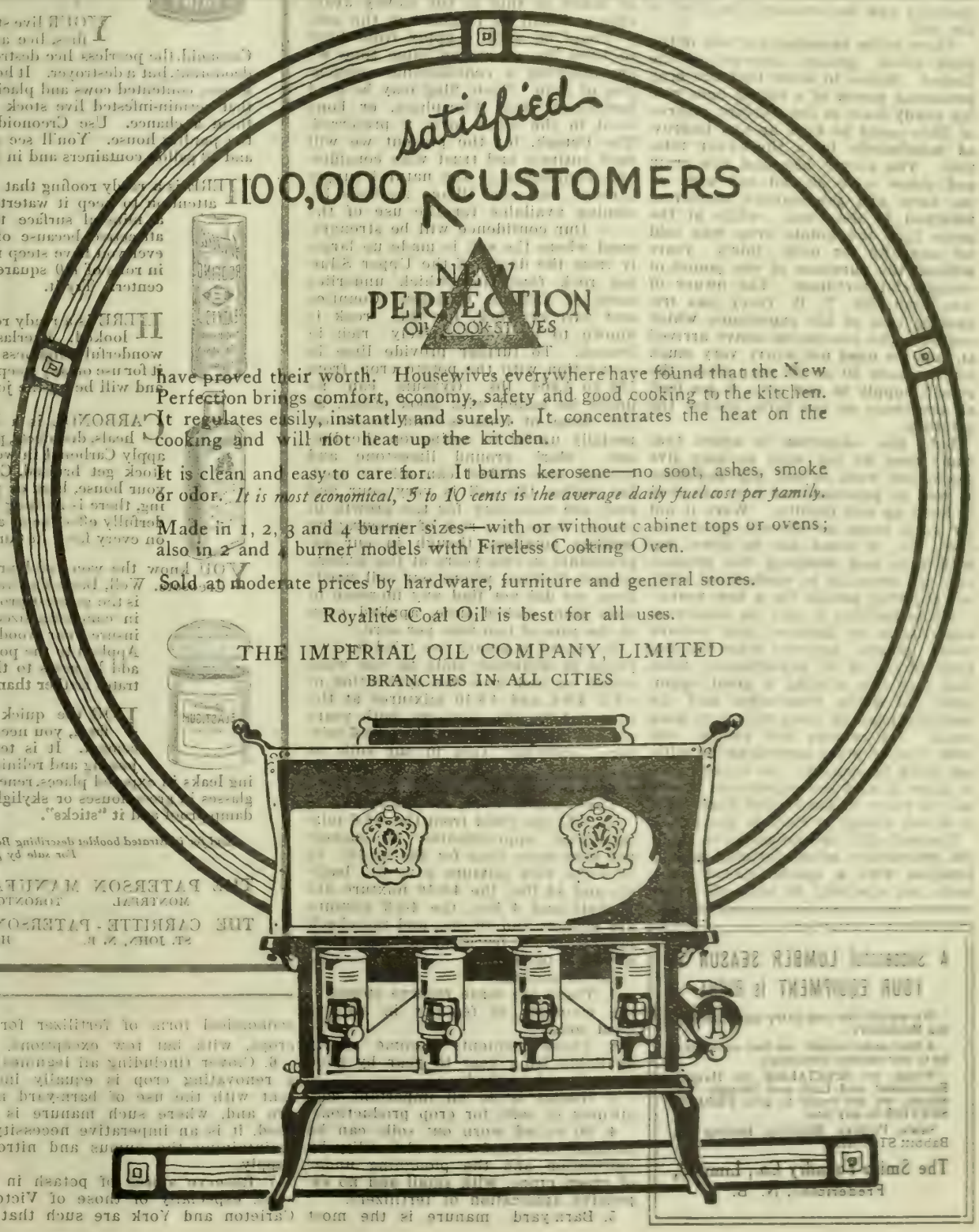
FEEDING VALUE OF CARROTS AND TURNIPS.

The comparative feeding value of carrots and turnips run about as follows:

Carots—Total dry matter, 11.04, digestible true protein .37, energy value 7.82.

Turnips—Total dry matter 9.04, digestible true protein .27, energy value 5.74.

A well-equipped farm shop is a mighty handy thing and a time and money saver. During the winter days much repairing and fitting can be done in a good shop that will save many a day's time in the rush of the spring work.



have proved their worth. Housewives everywhere have found that the New Perfection brings comfort, economy, safety and good cooking to the kitchen. It regulates easily, instantly and surely. It concentrates the heat on the cooking and will not heat up the kitchen.

It is clean and easy to care for. It burns kerosene—no soot, ashes, smoke or odor. *It is most economical, 5 to 10 cents is the average daily fuel cost per family.*

Made in 1, 2, 3 and 4 burner sizes—with or without cabinet tops or ovens; also in 2 and 4 burner models with Fireless Cooking Oven.

Sold at moderate prices by hardware, furniture and general stores.

Royalite Coal Oil is best for all uses.

THE IMPERIAL OIL COMPANY, LIMITED
BRANCHES IN ALL CITIES

Potato Growing and the Maintenance of Soil Fertility

(Continued from Page 485.)

is not essential, for as we have already seen, there is already in our average soils sufficient potash to grow these crops for at least sixty years without the addition of any more, provided we continue to make this potash available from year to year by good cultivation, and on some soils, the application of lime. We can further add greatly to this supply by the use of the clover crop which has the faculty of sending its roots down into the subsoil and drawing on reserves there. It has been proven that a good catch of clover which will give two tons of hay per acre will add the following amounts of fertilizing elements by the decay of its roots alone, viz.:

Nitrogen, 60 lbs.
Phosphoric Acid, 20 lbs.
Potash, 50 lbs.

A ten years' test of clover given at the Central Experimental Farm has shown that the soil is continually getting richer by the growth of this useful crop, not only by the addition of Nitrogent but also by adding humus with all its advantages to the mechanical and bacteriolical qualities of the soil.

There is the experience of one of the most noted potato growers of the United States to show that the crop producing power of a rather poor rolling sandy loam in the western reserve of Ohio could be kept up and improved indefinitely by a three-year rotation. The clover hay and the grain and straw were all fed and used on the farm and the manure therefrom returned to the soil, while at the same time the potato crop was sold off annually for over thirty years without the purchase of one pound of commercial fertilizer. The owner of this farm, Mr. T. B. Terry has frequently told of his experience which confirms the conclusion above arrived at that we need not worry very much for the next 50 or 60 year about the potash supply in our soils if we feed all the crops on our farm, except the potatoes.

But the objection is urged that many men do not wish to keep live stock, but want to sell hay and grain as well as potatoes, and how are they to keep up soil fertility. Were it not for such crops as clovers, peas, vetches, &c., it could not be done, but with care and economy the proposition can probably be worked out without applying potash for a few years.

While perhaps it may be somewhat superfluous to interject any remark those potato growers who will not keep stock, it is nevertheless time, that they are missing a great opportunity of doing themselves and the province good by their failure to keep stock. No country nor people can ever become great agriculturally without stock husbandry. All history goes to show it and the experience of the last 25 years in the United States and to a less extent in Canada proves it.

Theoretically, specialization is splendid, practically, mixed farming in combination with a special money crop, beats any specialty by long odd.

By the figures above given we have seen the demands on the soil for the crops of our three-year rotation. What will be required in the way of chemical fertilizers to meet this demand? The first requirement, before any fertilizer can act, is an adequate supply of humus. This will likely be provided by the ploughing under and thorough cultivation of a good sod. This, with the application of lime in some form, will help to make the inert potash soluble and thus available for the crop. This sod, especially a clover sod, in its decay sets free considerable quantities of Nitrogen and we might expect up to 60 lbs. per acre.

We found the requirements of our three crops were 123 lbs. nitrogen, 83 lbs. Phosphoric Acid and 248 lbs. Potash. We expect to have at least 60 lbs. available nitrogen in the soil, leaving a shortage of 63 lbs., to make up this we can supply 450 lbs. Nitrat of Soda or 340 lbs. Sulphate of Ammonia, 68 lbs. of Nitrogen, preferably half of it on the potato crop and the other half after the oats are up the second year. Then for Phosphoric Acid we can use Acid Phosphate, which to supply 83 lbs. of Phosphoric Acid will require about 600 lbs., but as much of this is but slowly available and will be retained in the soil, it would be well to apply from 1,000 to 1,200 lbs. as at the same time we are applying a considerable proportion of lime. Basic Slag may be used instead of Acid Phosphate, or bone meal in the same form if preferred The Potash, for the present we will omit entirely and trust with considerable confidence to the natural supply through our good tillage methods becoming available for the use of the crop. Our confidence will be strength ened where the soil is made up largely from the decay of the Upper Silurian rock formation which underlies mose of Victoria, Carleton Counties and part of York, for this rock is known to be comparatively rich in Potash. To further provide lime in connection with the potato crop, from 500 to 1,000 lbs. Gypsum can no doubt be added with good effect, as this form of lime is said to be especially useful in acting on the Potash. Marl, ground limestone and burned lime slaked can all be used, but unless the soil is very sour and they are necessary for the growth of clover, there is a risk of encouraging scabbly potatoes, though in our experiments in two years at the Experimental Station, where our soil needs lime, we did not find any increase of scab from slaked lime, applied even at the rate of two tons per acre.

In regard to potash, we tried for two years in different soils to see what result we had from the application of 4-8-3, 4-8-6 and 4-8-10 mixtures at the rate of 1,000 lbs. per acre, both years we got best results from the 4-8-6 mixture, showing that in our soils at least no benefit was received from an excess of Potash.

The figures were as follows:—

In 1913 the yield from the 4-8-6 mixture was approximately 20 bushels per acre more than for the 4-8-10. In 1914 the 4-8-6 mixture gave 319 bushels and 44 lbs., the 4-8-10 mixture 315 bushels and 4 lbs., the 4-8-3 mixture 299 bushels and 10 lbs., and the check plot without fertilizer of any kind, gave 192 bushels.

To summarize:—

1. There are large reserve stores of the elements of fertility in all our good soils.

2. These elements become slowly available from year to year by good agricultural methods.

3. Humus is an all important constituent of soils for crop production.

4. So called worn out soils can be brought to a good state of fertility by cultivation and the ploughing under of green crops, with small and no expensive application of fertilizers.

5. Barn-yard manure is the most economical form of fertilizer for all crops, with but few exceptions.

6. Clover (including all legumes) as a renovating crop is equally important with the use of barn-yard manure and, where such manure is not used, it is an imperative necessity to maintaining the humus and nitrogen supply.

7. Reserve stores of potash in our soils, especially of those of Victoria, Carleton and York are such that we should be able to grow good crops for at least 50 years without finding imported potash an absolute necessity.

8. Fertility in connection with potato growing must therefore be maintained and increased by the application of from 13 to 20 tons of barn-yard manure per acre on a three-year rotation of potatoes, oats and clover, or by the application of 400 to 500 lbs. Nitrate of Soda or Sulphat of Ammonia and from 600 to 1,200 lbs. Acid

A Successful LUMBER SEASON if YOUR EQUIPMENT is RIGHT

We would like you to try our Lumbering Machinery.

A trial order would, we feel confident, be to our mutual advantage.

While we SPECIALIZE on Haulup Equipment and Lath and Shingle Machines, we are ready to give PROMPT SERVICE in any line.

Saws, Pulleys, Shafting, Belting and Babbitt STOCKED.

The Smith Foundry Co., Limited,
Fredericton, N. B.

Barrett *Made in Canada*

Money Savers for Farmers

Seven good products good in more than Seventy different places

YOU can't beat arithmetic. When you buy something that has a limited usefulness your purchase is almost a luxury. But when you buy articles that you can use every day around the farm you purchase money-saving utilities. Such is the line of Barrett Money Savers. Every one is a quality leader of its kind. Every one comes from the home of business success. Every one will put money in your pocket at some time or other by saving you costly repairs, renewals or deterioration. Look over this advertisement and see if you are not struggling along without something you ought to have and can have for the minimum outlay.

EVERJET Elastic Paint is the best thing you can use on smooth-surfaced or metal roofing, on agricultural implements, structural iron work, fences and exposed surfaces. It is elastic, adhesive, and will not rub, crack or peel. Good in any climate. Don't let your implements or iron work deteriorate by rusting. Use Everjet Paint. It's permanent, cheap, and has great covering capacity.

YOUR live stock will be free from annoyance by insects, flies, lice and vermin if you spray them lightly with Creonoid, the peerless lice destroyer and cow spray. Not a deodorant, but a destroyer. It helps to make healthy, happy horses, contented cows and placid-minded pigs. You know that vermin-infested live stock can't be profitable. Give them a chance. Use Creonoid in the barn, the pig-sty, the poultry house. You'll see a difference. Sold in 1, 5 and 10 gallon containers and in half and full barrels.

HERE is a ready roofing that needs no painting or other attention to keep it watertight. Amatite Roofing has a mineral surface that laughs at wind and weather. Very attractive because of its bright, sparkling appearance. Wherever you have steep roofs, you need Amatite. Amatite is made in rolls of 110 square feet with galvanized nails and cement in center. Try it.

HERE is a ready roofing that should not be overlooked. Everlastic is a "Rubber Roofing" of wonderful toughness and durability. You can't beat it for use on any steep roof. Inexpensive, easy to lay, and will be on the job keeping out water for years.

CARBONOL is a household wonder. It cleans, heals, disinfects, purifies. If you cut your hand, apply Carbonol in weakened solution. If your live stock get bruised, Carbonol will fix them up. If your house, barn or poultry house needs disinfecting, there is nothing like Carbonol. And it is wonderfully effective as a destroyer of vermin. Carbonol belongs on every farm in Canada.

YOU know the wonderful preserving qualities of Creosote. Well, Barrett's Grade One Creosote Oil is the greatest product ever turned out in commercialized Creosote. It will insure your woodwork against decay. Applied to the posts of a fence it will add 15 years to that fence's life. By actual tests, it penetrates farther than any other preservative.

Barrett's Grade One Liquid **Creosote Oil**

FOR the quick repairs that are daily necessary on the farm, you need Elastigum. It is an elastic, waterproof cement. It is tenacious and durable. Just the thing for joining and relining gutters, flashings around chimneys, sealing leaks in exposed places, renewing gutters, stuffing cornices and putting glasses in greenhouses or skylights. It is easy to apply, is acid-proof and damp-proof and it "sticks".

Send for illustrated booklet describing Barrett Money Savers in detail. Address nearest office.
For sale by good dealers everywhere.

THE PATERSON MANUFACTURING COMPANY, LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE - PATERSON MANUFACTURING CO., LIMITED
ST. JOHN, N. B. HALIFAX, N. S. SYDNEY, N. S.

Phosphate, Basic Slag or Bone Meal.

9. In the course of the next 50 years it would be well to try and secure a potash supply wherewith to supplement the reserve stock then existent in the soil. For some years to come there is probably no cause for alarm.

A Guidance to Stable and Barn Construction and Fitting.

We have recently received a copy of Beatty Bros. B. T. Barn Book. This new Barn Book is well illustrated and shows splendid illustrations of some of the best barns from the Atlantic to the Pacific when B. T. equipment is used. Any farmer who is planning to build a new barn or remodel an old one will find illustrations and descriptions of a wide line of labor saving devices in the B. T. Barn Book which we are informed is sent free on request to interested farmers. It will show you many useful ideas in barn and stable construction and fitting. Send for a copy to Beatty Bros, Fergus, Ont.

Hill Selecting of Potatoes for Seed

Good seed is worth all of its cost of production; poor, weak seed is dear at any price. Seed of great vitality is of the utmost importance to the grower, and the losses due to poor seed would be staggering if fully realized. There is a widespread practice, among farmers, of planting second-size potatoes, regardless of whether they come from vigorous hills or not. This is a serious mistake which can have only one result, i.e., the early running out of the variety. The practice of hill selection should be carried out, for, although it involves some extra labor, it is worth many times its cost.

If the seed has been planted one seed piece in a place, uniformity of selection can be secured by confining the choice to the one-stalk hills in the field. This method can be varied, however, by setting a standard in the ratio of not less than four good, marketable potatoes to a one-stalk hill, and ten to a three-stalk hill. When the crop is half or two-thirds ripened, the grower, with a bundle of twigs or sticks, goes over the field and marks a number of the hills showing exceptional vigor, for next year's seed. When the crop is ready for digging, these marked hills can be dug by hand. All of the marked plants have shown vigor but all may not produce desirable tubers. Any marked hill which produces fewer tubers than we have set for the standard, or is undesirable in other respects, should be discarded. Selection in this manner secures vigor, which is of prime importance in enabling the crop to withstand insects and diseases. Moreover, the grower is obtaining all of his seed stock from hills that have produced a fair number of marketable tubers, thus insuring an increased yield.—F. C. N.

Soft Iron Wire Makes Good Belt Lace

Ordinary stove pipe wire, or any soft iron wire about eighteen or twenty gauge makes good belt lacing. Punch small holes about one-half an inch apart and one-half an inch from the end of the belt, lace with a double row of wire and twist the ends together. Place the joint on an anvil or a pulley and pound the lace into the belt.

You can lace large belts this way and they will be practically noiseless and last a long time.

Do your cows pay? The scales and Babcock test should be used to answer this question.

Unsatisfactory dealings could be avoided if the prospective buyer would make a personal visit to pick out the stock he wants.

RENNIES SEEDS

EVERYTHING NEW
FRESH—PURE
RELIABLE

Ask your dealer or write
RENNIE'S — MONTREAL
ALSO AT
TORONTO WINNIPEG VANCOUVER

Production and Thrift

"CANADA from her abundance can help supply the Empire's needs, and this must be a comforting thought for those upon whom the heavy burden of directing the Empire's affairs has been laid. Gain or no gain the course before the farmers of Canada is as clear as it was last year—they must produce abundantly in order to meet the demands that may be made and I believe this to be especially true in regard to live stock, the world's supply of which must be particularly affected in this vast struggle. Stress and strain may yet be in store for us all before this tragic conflict is over, but not one of us doubts the issue, and Canadians will do their duty in the highest sense of that great word."—*HON. MARTIN BURRELL, Minister of Agriculture.*

"MODERN war is made by resources, by money, by foodstuffs, as well as by men and by munitions. While war is our first business, it is the imperative duty of every man in Canada to produce all that he can, to work doubly hard while our soldiers are in the trenches, in order that the resources of the country may not only be conserved, but increased, for the great struggle that lies before us. *'Work and Save'* is a good motto for War-time."—*SIR THOMAS WHITE, Minister of Finance.*

THE CALL OF EMPIRE COMES AGAIN IN 1916

TO CANADIAN FARMERS, DAIRYMEN, FRUIT GROWERS, GARDENERS

WHAT IS NEEDED? THESE IN PARTICULAR—

WHEAT, OATS, HAY,
BEEF, PORK, BACON,
CHEESE, EGGS, BUTTER, POULTRY,
CANNED FRUITS, FRUIT JAMS,
SUGAR, HONEY, WOOL, FLAX FIBRE,
BEANS, PEAS, DRIED VEGETABLES

We must feed ourselves, feed our soldiers, and help feed the Allies. The need is greater in 1916 than it was in 1915. The difficulties are greater, the task is heavier, the need is more urgent, the call to patriotism is louder—therefore be thrifty and produce to the limit.

"THE AGRICULTURAL WAR BOOK FOR 1916" is now in the press. To be had from The Publications Branch, Department of Agriculture, Ottawa.

THE GOVERNMENT OF CANADA 2

THE DEPARTMENT OF AGRICULTURE THE DEPARTMENT OF FINANCE

KEITH'S SEEDS
THE FARMER'S HIGHWAY — FIFTY YEARS' SERVICE
1866 1916

Save Money and Buy Direct from our Seed House

Everything for Farm and Garden. We pay Railway Freight to all points in Maritime Provinces on all orders over $25.00. Be sure and see our Golden Jubilee catalogue before ordering your seeds. It contins a full list of Grasses, Roots, Vegetable and Flower Seeds. Write for one to-day.

Government Standard	Per bushel
No. 1 Mammoth Clover	$17.00
No. 1 Red Clover	16.50
No. 2 Red Clover	15.50
No. 1 Alsyke	13.15
No. 2 Alsyke	11.25
No. 1 Timothy	$5.85 per bus. 48 lbs.
No. 2 Timothy	5.75
(Extra No. 1 for purity)	
No. 2 Timothy	$5.35
Sweet Clover, White Blossom, 21c per lb	
Bags for Clover and Timothy	30c each

We have a small quantity of Grimm or Variegated Alfalfa. If interested, write for prices.

	Per Bus. bags free
O A C No. 72 Oats	$ 95
O A C No. 3 Oats	2.10
Oats, American Banner, registered (In 2 3-4 bus. sealed sacks.)	1.35
American Banner, unregistered	90
O A C No. 21 Barley	1.10
White Russian Wheat	1.90
Marquis Spring Wheat	1.90
Black Tares	3.75

GEO. KEITH & SONS SEEDS 124 KING ST. E TORONTO

Arbor Day 1916

(Continued from page 483.)

destroy everything loose that mars the appearance of the ground. Note where ground is wet or swampy and how it may best be drained. The play part of the school yard should be particularly clean and dry. Plan to spend a part of Arbor Day in providing and setting up at least one piece of apparatus for play use. Endeavor to enlist the practical sympathy of the women of the district, especially if there be members of a Women's Institute living there. These Institutes stand for "Home and Country." They will be found effective organizations for giving form to real local improvement by establishing it in the school.

Usually, trustees will be pleased to co-operate with the teachers and pupils and aid in securing assistance needed by getting trees, supplying the material and personally by coming to the school on Arbor Day and directing work, if for no more than two hours

Do not plan to close up school effort for the day at noon or one o'clock. Nothing dampens or weakens efforts more than by thus saying in effect, "Arbor Day is not so important as other school days, there is not much to do." Have part of the afternoon devoted to Nature talks, readings, songs and games. Combine physical mental, and moral effort of the child for his education. Do not forget the birds and their homes. Aim to put up one or two bird houses. Have one pupil selected to speak on behalf of the birds—a plea for their protection. Endeavor when ratepayers and ladies are present with the pupils to discuss plans for keeping the school property in an attractive condition during the vacation perood. Impress upon them that the school is about the only piece of property in which all the people of the community have ownership and that it therefore expresses their standing and their appreciation of the province. A disorderly, unkept school ground and garden in August often does much to discredit a community. If only dead apparatus is cared for and it only because it is policed by lock and key, appreciation of real local values is far too low. By a little effort and no money expenditure necessarily the school ground and garden may be kept neat and pretty and at the same time give enjoyment to all. The pleasure will be greater the more the social element is fostered.

So far as may be, weather and soil conditions permitting, the school garden may receive needed attention on Arbor Day. In large schools particularly, often there is not enough for the pupils to do. A well arranged time table for the day will include garden work for all, a class of not more than ten under a competent head working at one time. Where conditions for school ground effort are unfavorable, the preparation of window boxes and seed planting will have a good effect. In fact, in every school some of this work will be found to be interesting and useful.

In conclusion, begin early, be wise prepare thoroughly, definitely decide on your course of action, make Arbor Day educative, not only to the pupils, but strive to make it a feature of community interest. Magnify the school as a factor of local value worthy of support.

Every teacher will do well to obtain catalogues from seed houses. These give important information regarding plant cultivation.

Vines for walls or to screen—morning glory, wild cucumber, five fingered ivy, Virginia creeper, trumpet creeper, honeysuckle.

Shrubs—Lilac, rosebush, snowball, syringa, spirea.—R. P Steeves, Director Elementary - Agricultural Education.

PILES CURED at HOME by NEW Absorption Method.

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

Back-Yard Gardens

Every citizen can render service in the production of foodstuffs. Even in the heart of populous cities something can frequently be done. Cellars and roofs have been utilized for this purpose in New York. One fact worth bearing in mind is that every ounce of needed produce grown is so much added to the wealth of the country. If some part of the energy of every householder in Canada were bent upon producing something eatable, no matter how small, thousands of tons of valuable produce would be forthcoming, all of which whether consumed in the household or not, would help to make available for use in other ways an equal quantity and would aid in modifying the cost of living. Last year considerable progress was made in the appropriation of the seemingly waste land in towns and cities to useful purposes. Considerable success was achieved and this year it is not to be doubted the experiment will be extended with greater results. In fact in many centres plans made last fall or during the winter are already being carried out.

Germany has laid down utilization of the land, every foot of land, as one of her first principles. Every inch of land, according to the Teutonic proclamation, that is not used is so much of the country's resources wasted. France has adopted a regulation to the effect that every bit of space must be used for production; failing this being done by the owner the state is to take possession. Britain has given orders that golf courses and all meadow land are to be used for grazing purposes, and that previous pastures are to be put down in crops. Private parks are also being wooded out and the land devoted to practical agriculture. A campaign is being conducted having for its object the utilization of backyard gardens and all manner of vacant land. Thus the chief belligerents are setting the world an example in production and thrift that Canada would be wise to profit by as widely as possible and that municipalities an public bodies should do their utmost to encourage.

Roof with Paroid

Look for the Paroid Roll

WHAT looks like a saving in first cost, may in a few years prove a big expense. Paroid Roofing is so carefully made of tested materials, you avoid the repair bills that add heavily to the cost of a cheap roof. The first Paroid Roofs laid 18 years ago are still in good condition.

NEPONSET Paroid ROOFING

can be laid by yourself and your farm help so that in the wildest gale, the heaviest rain or snow storm, or while fire is raging, you need know no anxiety for your Paroid Roofs. Paroid is the roofing that will save you money. Made in Red, Grey and Green.

Look for the Paroid roll, by it you will know one of the 2,000 Neponset dealers in Canada.

Write for copy of "Repairing and Building"—FREE on request.

Try Neponset Wall Board in place of lumber, or laths and plaster—you'll like it.

BIRD & SON Dept. M
70 King St. East, Hamilton, Ont.
Warehouses in Winnipeg, Calgary, Vancouver, Montreal, Halifax, St. John, Edmonton.

The Largest Manufacturers of Roofings, Wall Boards, and Roofing Felts in Canada. 105

CHILDREN'S COUGHS

What Every Mother Should Know.

Doctors declare that cough-cures containing opium, morphine, or paregoric should never be given to children, save under medical directions. Most cough mixtures contain those things; Veno's Lightning Cough Cure does not. Veno's is guaranteed poison-free, and the ideal children's cough remedy. All kinds of children's coughs yield to Veno's—even whooping cough, however violent.

Awarded Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

Ask your English, Scotch, Irish, Welsh friends about Veno's Lightning Cough Cure. They know. Veno's is a British remedy, made in Britain by British capital and labour, and used wherever the grand old British flag flies. Give it your children, take it yourself; it is the remedy for—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness
Difficult Breathing
Whooping Cough
Blood Spitting
Asthma

Price 30 *cents.*

Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING COUGH CURE

Scores of reports of the operations carried on in the seasn of 1915 by the small householders speak of produce being grown worth from twenty-five to fifty dollars, every dollar of which meant so much added to the wealth of the country as well as saved in the cost of living. Financial profit is not the only gain forthcoming. Lessons of industry and thrift are inculcated and the whole household, from the oldest to the youngest, come under the influence of those qualities. They also have the gratification of eating fresh vegetables, the enjoyment of which is tremendously enhanced by the proud knowledge that they are home grown. What the families cannot eat themselves they have the pleasure of giving or selling to their neighbors or sending to some charity. It is hard to imagine any greater or more enduring satisfaction than a household in modest circumstances can experience than that to be derived as the reward of loving industry in a backyard garden.

Treat Seed Oats for Smut

Last season was particularly favorable to oat smut in the eastern part of Canada, resulting in a great increase of loss from this source. The grain crop will also be worse infected than usual, hence farmers should treat their seed oats very carefully this spring. A small expenditure of time and of money may, in this way, increase the yield per acre by five to fifteen bushels.

The prevention for smut in oats is as follows: On the evening before the seed oats are to be sown prepare a solution of formaldehyde (formalin) 1 pint to 40 gals. of water. Spread the oats five inches deep on the barn floor and sprinkle one gallon of the solution to each bushel. Shovel over thoroughly and cover the pile completely with the oat sacks, blankets, etc. The following morning spread the pile out to dry. Much of the moisture will have been absorbed by the grain, hence the seeder should be regulated to allow for the swelling of the seed.

Seeding of Clover

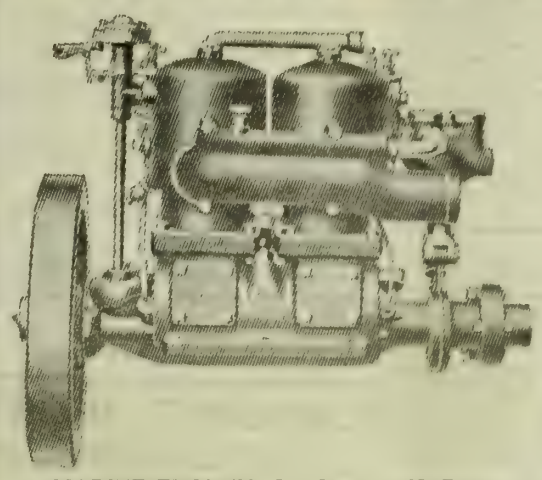
J. M. McLean, New Perth, P. E. I., says: "During the last two years the first crop of hay was always much better on the area sown with 10 pounds of clover and 10 pounds timothy, while this year we have an unusual stand of clover in the plots heavily seeded. We find the second crp is always much thicker and of a better quality after the thick seeding."

Numerous comparisons have been made on the Illustration Farms in the way of trying out home-grown seed side by side with that purchased from seed houses. The home-grown seed has given, in every instance, better results. In some cases the home-grown seed was just enough hardier to survive the winter while the crop from the purchased seed suffered very much from winter killing. The wise farmer will plan now to have a crop of clover seed this coming summer, if possible. By cutting the first crop early, the second or seed crop is allowed to get an early start.—F. C. Nunnick.

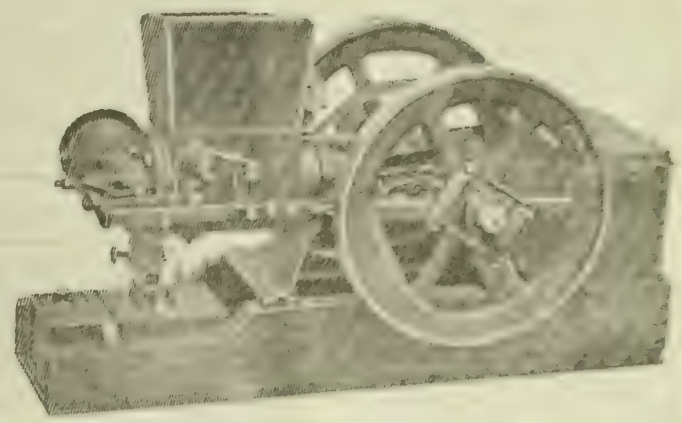
Grammercy—What, another new gown!

Mrs. Grammercy—Yes, dear, I must have one when I attend the lecture on domestic economy.

GUARANTEED ENGINES SPECIAL LOW PRICES



MARINE ENGINES, 2 1-2 to 12 H. P.



FARM ENGINES, 1 1-2 to 8 H. P.

STRONG AND RELIABLE—EASY ON FUEL

We offer a limited number of Marine Engines and Stationary Engines at special advertising prices. If you want an engine, write to us saying what work you want to do, and we will send a complete Catalogue and prices. You will wonder how they could be made for the money. Don't let a chance like this slip by you.

WRITE TO-DAY

THE DOMINION GENERAL EQUIPMENT CO.

Saw Mill, Woodworking, Metal Working and Contractors' Machinery. Concrete Mixers and Road Making Machinery

MERCHANTS' BANK BUILDING, ST. JOHN, N. B.

IN WRITING PLEASE MENTION THE MARITIME FARMER.

Production and Thrift Campaign

Plant a Vegetable Garden this Spring.

A garden 60x100 feet should produce sufficient vegetables for a family of ten persons, and leave some surplus for storage for winter. Cultivated by hand, it will occupy most of the spare time of a city dweller. A man cannot be a motor car or baseball enthusiast and at the same time make a success of a garden of this size. Hoever, even smaller plots, if intelligently handled, may be made to yield an astonishing quantity of good , crisp vegetables which have not lost their health-preserving value in the store window. Where the space avaliable is small, crops should be seleced that take but little space and give quicg returns. Potatoes, cabbage, corn, egg-plant, peppers, had better be dispensed with, an the space devoted to such things as peas, beans, spinach, lettuce, carrots, beets, tomatoes and onions. Tomatoes should be stake-trained.

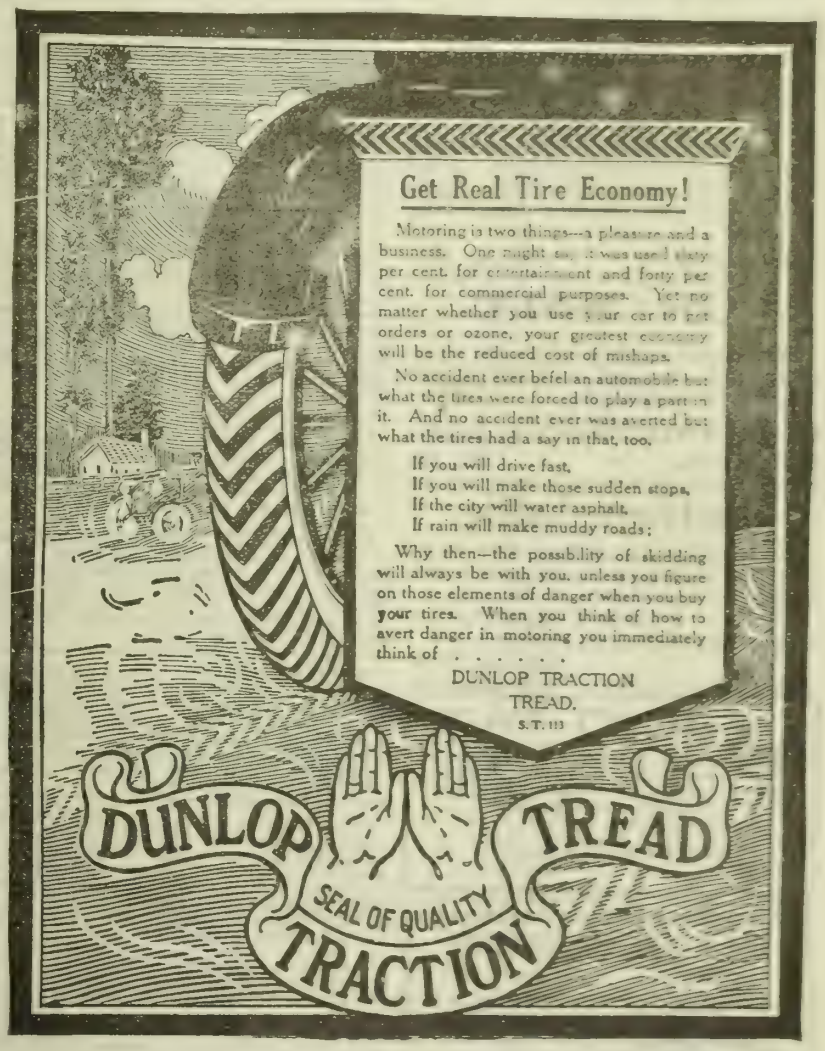
The cultivation of vegetables is easy and agreeable, and in the days when meat, eggs, milk and other staple articles are tending steadily to increase in price, a ider use of vegetable foods will reduce living expenses and promote health.

The best time to do garden work is early in the morning and in the evening; so that it is well to encourage the healthful habit of early retiring and early rising. If the work is done for the love of it, rather than from necessity, these hours will be the most agreeable of the day.

Garden Notes.

Vegetables are gross feeders and require a large amount of plant food to

(Continued on page 514.)


Get Real Tire Economy!
Motoring is two things—a pleasure and a business. One might say it was used sixty per cent. for entertainment and forty per cent. for commercial purposes. Yet no matter whether you use your car to get orders or ozone, your greatest economy will be the reduced cost of mishaps.
No accident ever befel an automobile but what the tires were forced to play a part in it. And no accident ever was averted but what the tires had a say in that, too.
If you will drive fast,
If you will make those sudden stops,
If the city will water asphalt,
If rain will make muddy roads;
Why then—the possibility of skidding will always be with you, unless you figure on those elements of danger when you buy your tires. When you think of how to avert danger in motoring you immediately think of . . . . . .
DUNLOP TRACTION TREAD.
S.T. 113
DUNLOP
SEAL OF QUALITY
TREAD
TRACTION

RED ROSE TEA "is good tea"

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

H. Lorne Steeves, Lower Coverdale, N. B.
R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BARRED PLYMOUTH ROCKS

We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.
E. L. Colpitts, Petitcodiac, N.B

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The address must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issue. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Pure bred Ayrshire Cow.—RALPH TAYLOR, Barss Corner, N. S.

FOR SALE—Two registered Ayrshire Bulls.—L. HERRIDGE, Hoyt, N B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

WHITE WYANDOTTES—Bred to lay and win. Eggs, $5 00, $3.00 and $2.00 per 13, according to quality.—CLARENCE FAWCETT, Sussex, N. B.

FOR SALE—Pure bred Buff Orpington and White Plymouth Rock Eggs, $1.25 per 15.—ELWIN U. HARRISON, Maccan Station, N. S.

FOR SALE—A pure bred Clydesdale Stallion, rising two years, from best of imported stock. Apply to FRED E. SHARP, R. R. No. 1, Norton, N. B.

FOR SALE:—Pure bred white Orppingtons & Buff Cochen eggs for Hatching write for prices. F. V. BISHOP, Kilburn N. B.

REGISTERED GREEN MOUNTAIN POTATO SEED (C. S. G. A.), 98% in Dominion field and bin inspections. $1.50 per bushel, bags extra.—LENNOX NAPIER, Lower Woodstock, N. B.

FOR SALE.—Purebred Berkshire Pigs from prize winning stock, five weeks old, $5.00. Order at once.—JAS. I. STEWART, Amherst Point, N. S.

PORTRAIT AGENTS WANTED.—Send for catalogue, solar and bromide prints, portraits flat and convex, frames and war pictures.—MERCHANTS' PORTRAIT CO., Toronto.

SENATOR DUNLAP STRAWBERRY PLANTS:—Booking orders now for this variety which has given general satisfaction in almost all sections and all kinds of soil, prices on application. RUFUS S. NEWCOMBE, Brooklyn Corner N. S.

REGISTERED CHESTER WHITE PIGS for April and May delivery. Pairs furnished not akin. Breeding stock bred by the best breeders in Canada.—W. S. COGSWELL, East Centreville, N. B.

WANTED TO PURCHASE—Two Grade Ayrshire New Milch Cows on or about May 1st. Write full particulars of same, naming lowest cash price to McKINNEY, 38 Ontario W., Montreal.

EGGS FOR HATCHING.—Park, Pittsfield strain of heavy laying Barred Plymouth Rocks, Blanchard, Wycoff Strain, White Leghorns, $2.00 per setting, 244 egg Cyphers Latest Model Incubator for sale, good condition, price $16.00. J. H. PRICHARD, Summerside, P. E. I.

PONY AND OUTFIT FOR SALE.—One Pony, 6 years old, sound, kind and good driver; one set Harness with two extra collar hames and traces; one light Driving Wagon, one light Work Wagon; one light Driving Sleigh; all in good condition. For particulars write WM. M. EMENAN, Lunenburg, N. S.

FOR SALE.—Bronze Turkey Eggs from large hens, headed by 40 lb. gobbler, $4.00 dozen; B.P. Rock Eggs, $1.50 for 13; W. Leghorn Eggs, $1.50 for 13; White Wyandotte Eggs, $2 00 for 13; Guinea Eggs, (Pearl) $1.00 for 9. Belgian Hares and Flemish Giant Rabbits, $1.00 each and upwards. No orders filled parcel post.—HOTEL DIEU FARM, Chatham, N. B.

GET YOUR NEW SUIT:—From Catesbys, London, England, for half what you pay local tailor. Best materials, style, fit guaranteed, or money back. Write for free Catalogue, self measurement form and patterns. Address CATESBYS LIMITED, CANADIAN OFFICE, 191 WELLINGTON ST. WEST. TORONTO. MENTION—Maritime Farmer.

WANTED—PERSONS TO GROW MUSHROOMS for us at their own homes. From $15, per week upwards can be made by using small waste space in cellars, sheds, yards or gardens. We furnish full instructions. Illustrated booklet sent free on request. Address MONTREAL SUPPLY CO. Montreal Can.

HOUDANS

The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast males. Combs and wattles protected by heavy crest and beard. Eggs $1.50 per 15. Cash with order

W. J. M. MacLEOD, Sussex, N. B.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

Present Offering—Bull and Heifer Calves from high producing dams.
Prices reasonable for the quality.

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

Some Hazards in Handling Gasoline

In connection with investigations regarding safety and efficiency in the use of petroleum and its products, the bureau of mines has made numerous tests of gasoline. In Technical Paper No. 127, by G. A. Burrell, are stated the hazards that may result from handling these liquids and the precautions to be observed.

Gasoline vapor mingles with the air in the same manner that water vapor does, the tmount carried depending upon the temperature of the air and the readiness with which the vapor can be obtained. If one takes the cover off a full pail of tightly enclosed gasoline and applies a match to the surface, the gasoline will flare up and burn as long as the gasoline lasts. On the other hand if one puts a few drops of gasoline in a small tightly enclosed pail, waits a few minutes and then produces a flame or electric spark, a violent explosion will likely result.

In the first case the vapor burns as fast as it comes from the gasoline and mixes with the oxygen of the air, whereas in the second case the oil vaporizes in the pail and mixes uniformly with the air to form an explosive mixture and upon ignition, explodes.

One gallon of gasoline when entirely vaporized produces about 32 cubic feet of vapor. If a lighted match could be applied to pure gasoline vapor in the absence of air, no fire or explosion would result. At ordinary temperatures air will hold from 5 to 28 per cent of gasoline vapor, depending upon the grade of gasoline. In 100 parts by volume of air and gasoline, an explosion would not take place it there were more than 6 parts of gasoline, or less than 1.4 parts. In other words the explosive range is between 1.4 and 6 per cent of vapor. One gallon of gasoline can, under ideal conditions, render 2,100 cubic feet of an explosive mixture.—H. J. Wilson, Colorado Agricultural College.

VOLUME OF INCH OF RAIN.

An inch of rain coming down on a single acre of ground would fill more than 600 barrels of 45 gallons capacity each. This amount of water would weigh more than 110 tons, or nearly a quarter of a million pounds.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.

PEN NO 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm," Oxford Junct., N.S.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00

Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

Registered Ayrshire Bulls For Sale.

Four P. B. Ayrshire Bulls. No. 1 is one year old. Winner of 1st Prize at last Exhibition. Dame produced 13183 lbs milk and 530 lbs butter fat in 12 mos. R. O. P. Test. His Sire's dam produced 11365 lbs of milk and 511 lbs butter fat as a 4 yr old in 12 mos R. O. P. Test.

No. 2 is 18 mos old. Prize Winner at Exhibition. His Dam now in R. O P. Test has produced in first two months of Test 2802 lbs milk and 121.4 lbs butter fat. His Sire is from Dam of above Buil.

No. 3 is 3 mos. old. His Dam is same as No. 2

No. 4 is 7 mos. old. His Dam qualified in R. O. P. Test with High Records. These Bulls are all in Excellent Condition.

ARTHUR S. DENNIS,
"Willow Farm,"
Stewiacke, Col. Co., N.S.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. **J. MEIKLEJOHN, Agent.**

Elmhurst Stock Farm!

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys!

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Great Dispersion Sale of 75 Head of Imported and Canadian Bred Ayrshire Cattle.

The celebrated Glenhurst herd, the property of James Benning Williamstown, Ont. Wednesday April 19th., 1916 World's Fair Champions were bred in this herd, included are six females of the famous Floss Strain. This herd was founded 55 years ago, and is headed by "Glenhurst Torrs Mayor" 43480 year Champions at Regina 1914 sire 'Lessnessock Coweb" (Imp) 30686 Dane, Torrs Cony 3rd 30597.

Mature Cows milking 60 lbs per day. four year olds milking 50 to 55 lbs per day, two year olds making records of 8500 lbs, Cows milking 1500 to 1900 lbs per month testing 4.02% to 4.067% butter fat, Cows large size, large teats and good testers and good milkers.

Vehicles will meet trains from East and West the morning of the sale. Write for Catalogues Sale will commence at 1 P. M.

JAMES BENNING, - Williamston, Ont.
A. PHILPS, M.L.A., Auctioneer

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

Butter Parchment at Farmer Office, Sussex

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell View Farm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires!

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Small Fruit Plants

Strawberries.—Senator Dunlap, $3.50 per 1,000; other choice varieties, 85c per 100; mail postpaid.

Raspberries.—"Herbert," the only reliable, 75c per doz, mail postpaid; $2.00 per 100, $15.00 per 1,000.

Gooseberries.—"Pearl," 15c each.

EGGS FOR HATCHING.

Barred Plymouth Rocks, White Wyandottes and S. C. White Leghorns. Price $1.00 per 15.

Send for circular.

ORCHARD HILL FARM,
Brown's Flats, N.B.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows 2 months old. Boar one year old All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - Clifton, N. S.

Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

COBEQUID F RM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

Poultrymen Attention!

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.

Send for free Catalogue and give us a trial order

EGGS FOR HATCHING

From two pens of Pure Bred White Wyandottes. Selected Birds. Pens headed by males imported direct from John S. Martin, Port Dover and Mcleod Bros, Stony Creek, Ont, the latter bird guaranteed by them to be bred from a hen who in her pullet year laid 249 eggs. Price $1.00 per 15 Also from one pen of Single Comb Rhode Island Reds, good laying strain, good color. Price $1 per 15.

Hattie E. Crowe, Lower Truro, N.S

FARMS FOR SALE

Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

FOR SALE!

Shorthorn Bull, 5 months old. Dam weighs 1340 lbs. and in four months has given over half the amount of milk required in twelve months to qualify for Record of Performance. Her sister Gertrude 103850 has an Official Test of 9383 lbs. in 314 days.

P. R. L. FAIRWEATHER, Rothesay, N. B.

Genuine Clearing Sale of

Standard Bred Poultry

Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER.
33 Jubilee Road. HALIFAX, N. S.

Horse Posters at Farmer Office

Production and Thrift Campaign

(Continued from page 511.)

give maximum results. Well rotted manure is the ideal garden fertilizer.

In small gardens, particularly where the soil is light, if manured and dug over in the autumn, a second diging in the spring will be advisable only of such portions as are to be devoted to such crops as cabbage, tomatoes, egg plant, lettuce. A stirring of the surface will be sufficient where beets, carrots, etc. are to be grown, and this should not take place until the time for planting and sowing arrives, as the freshly worked soil is best for both operations. It is important that soil should not be worked in too wet a condition, otherwise it will dry in lumps, and much time and labor will be necessary to repair the damage.

The secret of success with early planting of such crops as peas, beets, beans, is to sow the seed at only half the depth of later plantings. This is particularly the case on heavy soils. Seeding on light soil should always be at a slightly greater depth than on the heavy soil.

Remember that in dry weather cultivation should be continuous. When watering is necessary, it should be applied to the roots and not sprayed or sprinkled over the surface. A trench may be opened up with a hand or wheel hoe along each row, the water poured in from a pail, and the earth thrown back. In thi way two hundred feet of row may be thoroughly watered by two perons in half an hour and cultivating and watering are performed in one operation.

Good wood ahes form an excellent fertilizer for the garden. They should be applied in the spring when the land is not too wet. Sifted coal ashes will be of great benefit on heavy soil and help set free food for the plants.

Soils that have been under cultivation for some time need lime. Crops will not grow well if the soil is acid, and lime corrects acidity and liberates plant food. It should be applied broad cast early in the spring, at the rate of say, one pound to ten square feet.

Have a garden, if possible, not only for the fresh, wholesome food that can be produced but also for the pleasure of it. Plant a few flowers seed and watch them grow.

ONE CENT A WORD

FOR SALE.—Pure bred Durham Bull, twelve months old.—HARRY PALMETER, Billtown, Kings Co., N. S.

FOR SALE.—Pure bred Indian Runner Duck Eggs. $1.00 per setting.—W. A. BROWN, Greenwich, Kings Co., N. S.

FOR SALE.—One litter of Yorkshire Pigs and one litter of Berkshire Pigs.—A. E. FERGUSON, Bathurst West, N. B.

EGGS from the following breeds, $1.00 setting of 15 eggs, Houdans, B. P. Rocks, Columbian Wyandottes, all choice stock.—JOSEPH PERRY, Petitcodiac, N. B.

BRED TO LAY AND PAY ANCONAS.—Highly fertile eggs from splendid pens. Single and Rose Comb Anconas, Sicilian Buttercups, $2.00 and $3.00 per 15.—A. G. APPS, Brantford, Ont.

GET YOUR NEW SUIT FROM CATESBYS, LONDON, ENGLAND, for half what you pay local tailor. Best materials, style, fit guaranteed or money back. Write for free catalogue, self measurement form and patterns. Address CATESBYS LIMITED, Canadian Office, 119 Wellington S. West, Toronto. Mention "Maritime Farmer."

JERSEY BULLS FOR SALE

Three young Bulls from R. O. P. cows with splendid records. These are just the type of Bull required by creamery patrons who wish to improve the producing qualities of his herd, both in quantity and quality of milk and our price puts them within the reach of the man of moderate means.

W. CLARK & SONS,
Maple Grove Farm, North Wiltshire, P. E. I.

Widow Must Sell 1500 Apple Trees

210 acres in Maine; owner estimates around 3000 cords wood and large quantity of timber; this wood marketed should more than pay for property; 25 acres machine-worked fields; 20-cow brook pasture; on cream route; the apple orchard, properly cared for, would pay handsomely; 6-room house, 40-ft. barn, daily mail, good schools, near neighbors; only $2600, part down. For traveling instructions see page 5. "Strout's Money-Making Farms," copy free. E. A. STROUT FARM AGENCY, Dept. 2612, 204 Washington St., Boston, Mass.

VALLEY FARM HOLSTEINS FOR SALE!

Col. George W. Fowler, O. C. 104th Battalion, who is going over seas, offers for sale his entire herd of pure bred Holsteins.

The herd includes some of the best bred Holsteins in Canada, mature cows and young stock from record making dams.

Females of all ages. Herd bull first prize winner at some of Canada's leading shows in 1915, also several young bulls.

Write us your needs or better still call to see our herd in their home quarters. Prices reasonable.

FRANK MYERS,
Herdsman for Col. George W. Fowler, Sussex, N. B.

AN IDEAL TONIC

When your head is dull and heavy, your tongue furred, and you feel done-up and good for nothing, without knowing what is really the matter with you, probably all that is needed to restore you to health and vigour is a few doses of a reliable digestive tonic and stomachic remedy such as Mother Seigel's Syrup. Take it after each meal for a few days and note how beneficial is its action upon the stomach, liver and bowels—how it restores tone and healthy activity to these important organs, and by so doing enables you to gain new stores of vigour, vitality and health.

FOR THE STOMACH AND LIVER

MOTHER SEIGEL'S SYRUP

The new 1.00 size contains *three times as much* as the trial size sold at 50c per bottle.

5015

Production and Thrift

"TO win the war with the decisiveness which will ensure lasting peace, the Empire will require to put forth its full collective power in men and in money. From this viewpoint it is our true policy to augment our financial strength by multiplying our productive exertions and by exercising rigid economy, which reduces to the minimum all expenditures upon luxuries and non-essentials. Only in this way shall we be able to make good the loss caused by the withdrawal of so many of our workers from industrial activities, repair the wastage of the war, and find the funds for its continuance. It cannot be too frequently or too earnestly impressed upon our people that the heaviest burdens of the conflict still lie before us, and that industry and thrift are, for those who remain at home, supreme patriotic duties upon whose faithful fulfilment our success, and consequently our national safety, may ultimately depend."—*SIR THOMAS WHITE, Minister of Finance.*

PRODUCE MORE, SAVE MORE.
MAKE LABOUR EFFICIENT.
SAVE MATERIALS FROM WASTE.
SPEND MONEY WISELY.

LET US PRODUCE AND SAVE—

The war is now turning on a contest of all forces and resources—men, munitions, food, money. The call to all is to produce more and more. It may be necessary to work harder. The place of those who enlist must be taken by those at home, men and women, old and young. The more we produce the more we can save. Produce more on the farms and in the gardens. Save more and help to win the war.

LET US NOT WASTE OUR LABOUR—

In this war-time all labour should be directly productive or should be assisting in production. Make it as efficient as possible. If your labour is on something that can be postponed, put it off till after the war and make your labour tell now. Making war is the first business of all Canadians. Efficiency in labour is as important as efficiency in fighting.

LET US NOT WASTE MATERIALS—

Begin at home. The larger portion of salaries and wages is spent on the home—food, fuel, light, clothing. Are any of these things being wasted? $20.00 a year saved from waste in every home in Canada will more than pay the interest on a war debt of $500,000,000.

LET US SPEND OUR MONEY WISELY—

Are you spending your money to the best advantage? What do you think of extravagance in war time? Tens of thousands of Canadians are daily risking their lives for us at home. Is it not our duty to be careful and economical? Canadian dollars are an important part of the war equipment. Make them tell. Have a War Savings Account. Buy a War Bond.

THE GOVERNMENT OF CANADA

THE DEPARTMENT OF AGRICULTURE — 3 — THE DEPARTMENT OF FINANCE

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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The Present Opportunity for Canadian Stockmen

By John Bright, Dominion Live Stock Commissioner

A study of the live stock situation of the world at the present time cannot fail to convince any practical person that Canadian stockmen will have, in the immediate future, an exceptional opportunity for profitable trade. The question as yet unanswered is whether they will realize the situation in time so to conduct their operations as to take the fullest advantage of it. This is a matter of the utmost importance, not only from the standpoint of the individual farmer, but also from a national standpoint.

While the national phase of the question may lie somewhat outside of the consideration of the average farmer, the matter of personal profit may be depended upon to make its own appeal. In considering the latter aspect of the case the stockman who is convinced that an unprecedented opportunity is presenting itself to develop the live stock business of Canada, should not lose sight of the essential factors that will make such development possible. The most important of these factors are:—

(1) The lay of the foundation now by breeding stock;

(2) Improvement in the quality of live stock products by intelligent breeding—the use of good sires, the weeding out of all scrubs both male and female, consistent adherence to one breed, early castration of calves and of lambs;

(3) Improvement in the care and feeding of young animals and improvement in the finishing of animals for market;

(4) The providing of a steady volume of trade by remaining continuously in the ranks of the live stock producers despite temporary and sometimes discouraging fluctuations in price as governed by the world's demand for live stock products.

Until the last two or three years, Canadian farmers have annually allowed useful female breeding stock, particularly cows and heifers, to go to market in large numbers. While the rising prices of meats have checked this movement of late years, it must be admitted that, even yet, at certain seasons of the year, there may be seen on any of our large markets females of good type and with many years of usefulness ahead of them. The country cannot afford to lose such animals at the present time and the prevention of their slaughter is one of the first and most important steps to be taken in conserving our breeding stock. Similarly, for many years, the high prices ruling for veal resulted in annually increasing receipts for calves on the live stock markets. While male calves of dairy blood formed a considerable percentage of such receipts, unfortunately many excellent calves, both male and female, of good beef type, were slaughtered. The loss to the breeding herds and to the feeders' stalls was serious, and we are even yet feeling the effects of this sacrifice of potential beef, despite the fact that during the last two or three years there has been a marked falling off in the offerings of good calves. The prevention of such sacrifices entirely will mark the second and supplementary step necessary to the conservation of our breeding stock.

While it is true that in many parts of Canada our live stock shows the evidence of careful consistent breeding, there is a very considerable area both in newer sections of the West and in the rougher sections of the older provinces in which no improvement in quality has been effected in years. Further, it is unfortunately the case that in some districts in the West the quality of the cattle is already showing signs of deterioration, owing to the practice of foreign settlers of allowing scrub bulls and uncastrated yearlings to run with the herds. The importance of using only good sires is appreciated by a very large percentage of our farmers, but unfortunately such sires are not always used intelligently. Even in sections in which associations have been formed for the purpose of improving the live stock of the district, the practice of breeding to a sire of one breed for two or three years and then changing to a sire of another breed has been followed, with the natural result that practically no progress has been made. It has been well said hat the average Canadian farmer is less conservative on the question of the breed of the live stock raised on his farm than any other question relating to his operations. It is time the fact was more generally realized that real progress can be made only by consistently sticking to one breed, by using the best sires obtainable in that breed, and by systematically discarding females that do not prove their usefulness as breeders of animals of good type. Quality, which depends in the first place upon good blood, is one of the most important considerations in live stock breeding and has an important bearing on the price ultimately realized for the product when turned into meat.

It does not require a very intimate knowledge of the methods followed in handling live stock on the farms of Canada to enable one to realize that too many farmers do not appreciate the importance of the first year, or of the first few months, as the case may be, in the life of a young animal. It cannot be expected that a calf, no matter how well bred, is going to develop into a well-grown breeding animal or into a profitable feeder if it has been allowed to practically raise itself during the first year of its life. In fact, in many of the more backward districts it would appear that money invested in well-bred stock would be practically a total loss until the farmers are educated to feed and care for the offspring properly and to give them a chance to develop. There are many sections to which, of course, the foregoing remarks do not apply, but the improvement that would be effected in our total annual live stock receipts by the more general practice of properly feeding young animals would be remarkable. It may be added that even in some of our better districts the cattle sent to market lack finish, and only an exceedingly small percentage of our heavy steers would be suitable for the British market. In addition, the number of cattle sent out of the country in an unfinished condition as stockers and feeders last year was deplorable, particularly in view of the fact that never were larger quantities of feed available. Herein lies one of the most important questions to be solved in connection with the increase of our beef production.

The importance of renewed exertion on the part of Canadian stockmen during 1916 cannot be overestimated, and it is unnecessary to state that the Department of Agriculture, through the Live Stock Branch, stands prepared to support such efforts both by policies at present in operation and by those that may later be inaugurated.

The Empires Share in the Meat Trade.

In Australia there are about forty freezing works with the exportable surplus from 11,000,000 head of cattle and 80,500,000 sheep and lambs.

There are in New Zealand no fewer than forty freezing works, in operation or in course of construction, to deal with the exportable surplus from 25,000,000 sheep and lambs and about 2,000,000 head of cattle.

Australia and New Zealand are practically the only regular and reliable sources of supply within the Empire, and they together furnished only 284,056 tons of meat in 1915, out of 664,508 imported into the United Kingdom. In addition, there was a small import from Canada, and a still smaller import from South Africa. The Overseas Dominions should be equipped to furnish much more than one-half of the meat imports of Great Britain.

It is in the interests of the Empire that everything possible should be done to foster the Canadian Live Stock industry. In Canada the number of cattle is about 6,000,000, besides 2,000,000 sheep—a total which, having regard to the population of the Dominion, does not at present leave a very large margin for export. With the probability of preferential trade in food within the Empire there are great possibilities in the expansion of Canadian live stock production.

Imports by the United Kingdom

	1913 Tons	1914 Tons	1915 Tons
Beef, Mutton and Lamb—			
Importations into United Kingdom from foreign countries	447,433	407,856	374,534
Importations into United Kingdom within the United Kingdom	273,228	286,609	289,974
	720,661	694,465	664,508
Beef only—			
Importations into United Kingdom from foreign countries	380,135	340,525	325,453
Importations into United Kingdom within the Empire	79,909	101,440	104,967
	460,044	441,965	430,420

Have you ever asked yourself why it is that live stock breeders who patronized the advertising columns of the Maritime Farmer ten to twenty years ago are still using this medium to let the public know what they have to offer? There is only one reply. They have tried the columns of the Maritime Farmer, and they have not been found wanting. Ads in the Maritime Farmer bring inquiries from the class of farmers who are ready to buy and pay for good live stock. After you get inquiries it is up to you to make the sale—and you will, if you have the right kind to offer. Try an ad in our columns and prove if for yourself.

The Growing, Handling and Marketing of Potatoes

Address at the New Brunswick Potato Growers Convention by Guy G. Porter, Perth, N.B.

Two dominant factors which have helped this province to the enviable position it now occupies as the banner Potato Province of Canada are, undoubtedly, our suitable climate and soil. Neither climate nor soil without hard work will produce potatoes, and hard work, unless properly directed and coupled with scientific knowledge, diligently applied, will not produce the results we are striving for.

Second—Selection of Seed and Ground:

All will admit that it is very necessary to select the seed with the most of care, being sure to use nothing but sound tubers of medium size, free from all diseases. Then, again, it is very important that good, clean ground be selected, in which there are no contagious diseases carried over from season to season. With proper attention to these two important factors, your potato crop will have been started under favorable conditions.

Third—Cultivation and Care While Growing:

It is gratifying to know that in recent years spraying with a proper Bordeaux Mixture has become very prevalent, and that the results from thorough spraying are showing big profits in the way of increased yields and better quality. Improvement in quality is just as necessary as increase in yield, and I am strongly convinced that only as long as we produce the best quality of potatoes possible with all our advantages of soil and climate will we be able to hold first place in the potato industry in Canada.

Fourth—Digging and Delivery to Shippers:

Experience has shown me that nearly ten per cent of the entire potato crop of New Brunswick is spoiled by rough handling between the field and the shipper's warehouse. Many farmers handle their stock so roughly that the entire value of their crop depreciates ten per cent from bruises, cuts, cracks, etc., which later develop deterioration. By rough handling the nice, smooth, sound appearance is lost when the potatoes are delivered at the buying points. Estimating the potato crop at ten million bushels, and estimating this crop at the low price of 25 cents per bushel, the farmers are losing two hundred and fifty thousand dollars annually by rough handling. This amount of money which is lost through carelessness would pay the expense of selling the entire crop under proper organization, and would net the province a quarter of a million dollars annually. Farmers, handle your potatoes as you would fruit! They are worth just as much as oranges today. I would like to see the government, or some association of shippers or growers, prepare a pamphlet from time to time, to be distributed among the farmers as well as the shippers, educating both farmers and shippers how the potato crop should be handled. The potato crop is one which can be raised most profitbaly in this province, providing the waste in raising and marketing could be eliminated. This waste, if converted into dollars and cents, would pay the interest on the debt of the province every year. It is therefore most important, especially at this time of general economizing, that both farmers and shippers learn something about economy in the handling of their potatoes.

Again, in the buying of stock by the shippers there is very little effort to try and improve the standard of quality. The shipper, as a rule, buys indiscriminately everything that is hauled to his warehouse. He seems to work on the idea that it does not pay to be too particular about quality, fearing that he may drive his customer to some other shipper who would accept the poor quality without protest. He overlooks the fact that in accepting a load of poor potatoes he does an injury to the farmer who is bringing to market first-class stock. He dumps them all in the car together, and as a result the good stock, that should have graded No. 1, is mixed with the poor stock, which would grade No. 2, and the result is the whole car will grade nothing better than No. 2.

Although the growing end and the shipping end of the potato business are separate and apart in every way—so much so that the growers usually take all the profit and the shipper all the loss—still the interests of the potato growers and shippers are so interlocked that the closest co-operation concerning quality would undoubtedly be of advantage to both. Interlocked with their interests, again, are those of the buyer, and indirectly the consumer, the man who puts the butter on your bread.

I believe we should adopt a set of grading rules and a standard of quality. It it is now, ninety per cent of the cars we ship grade No. 2, and we are getting the No. 2 price in consequence of the lack of organization among growers and shippers. No. 1 stock should be potatoes of a medium size thoroughly screened, free from rots, cuts, and bruises. No. 2 stock should be a little smaller than medium and would also include the large rough stock and potatoes that are only slightly bruised or cut. No. 3 stock should never leave the farm, as its commercial value is not as great as its feeding value. I have seen potatoes from every province in Canada, and can say without hesitation that our potatoes are in a class by themselves, but in the grading and packing we are a century behind the times.

As an illustration, let us take the apple crop of Ontario. A few years ago the farmers used to sell their apples in bulk. They were sent to market in carload lots in bulk, and shoveled up with a fork. They sold for a dollar a barrel. One enterprising firm undertook to put up a quality brand in bushel boxes. The neighbors laughed themselves into a hemorrhage when they figured how much the boxes cost, but when they saw this firm get as much for a bushel as they did for a barrel they thought there must be something in it, and development along this line was rapid. Now we find that all Ontario apples are shipped in bushel boxes or barrels, bearing a standard of quality No. 1, No. 2, or No. 3, as the case may be. If a shipper sends in a barrel marked "No. 1" and it contains some No. 3's, the fine is $50.00 and costs. We see only about one case a year where a shipper gets fined. They have got accustomed to living up to the standard of quality and it comes easy to them now. Why? Simply because they get $3.00 for No. 1's, $2.00 for No. 2's, and $1.00 for No. 3's.

When they dumped everything in a box car in bulk, as we are doing with our potatoes today, their orchards were growing up in weeds. The farmers would not pick the apples, but shook the trees and let the hogs in; these wasteful methods are things of the past; they have been educated to market their crop in a more profitable manner. Old orchards are being restored and orchard land has increased in value from two to four hundred per cent.

We are today in the same shape as the Ontario apple growers were forty years ago. The waste each year from not having a standard of quality is criminal. Our potato crop is not bringing more than fifty per cent of its real value, simply because we have no standard of quality, no grading regulations—in fact, no efficient organization behind the potato industry. If we had grading regulations and a standard of quality to live up to, backed up by organized control, either government or association, it would be but a short time before seventy-five per cent of our entire crop would grade No. 1. The farmers would know that bruised and small potatoes would not sell to advantage, and would take more care in handling their crop. Each farmer would do his best to market his crop under No. 1 classification, and in a very short time New Brunswick potatoes would be known in all the markets of the world as "The Best."

If this grading of potatoes were carried out, the crop would bring hundreds of thousands of dollars more every year to the farmers of this province, and the value of their farms would increase by leaps and bounds. Our competitors in every province would get so little demand for their potatoes that they would quit the potato business and go in for other lines. The potato would soon be the most important crop of the province, and New Brunswick would continue to grow in prominence on the map of North America. We must take advantage of our opportunities. We must take better care of our stock. We must grade and pack our potatoes better, so that we will have the best to offer on any market that requires our goods.

I do not believe you can educate a farmer or a shipper through sentiment, friendship, or politics; the only way to appeal to them is through their pocketbooks—show them how it will be to their dvantage to grow and grade their stock in the proper manner, just as the apple growers of Ontario were shown. If this is done, both growers and shippers will become rich, standards of quality will be maintained, and progress will be rapid. I also believe we should abandon the practice of shipping in bulk. Our potatoes should be graded, put up in either bags or barrels, and marked No. 1 or No. 2, as the case may be. If this were done, we would be able to market our stock to much better advantage.

Fifth—Marketing the Crop:

Developing the market for our goods, and the intelligent distribution of the crop upon the different markets at a good price, is perhaps the most important feature of the business. This means constant scrutiny of the forces that tend to boost or break the market. There are many methods employed by the different shippers in this province in marketing their goods, but I believe the best and only practical way to market our potatoes is through a reliable representative, located in the larger selling centres, who are able to keep their fingers on the pulse of the market every hour of the day and report faithfully by wire to their shippers daily.

It is very important that markets are not allowed to become overstocked and in this connection I want to very strongly discourage the idea of consigning potatoes to Montreal, Toronto, or any other market unsold. Sometimes this can be done at a profit, but nine cases out of ten results are disappointing and sometimes disastrous. I know of many cases where shippers rely almost entirely on shipping on consignment basis to their brokers. These goods are shipped to the different markets, mostly Montreal and Toronto, without even first finding out whether the market requires these potatoes, or if they can be sold at a profit upon arrival.

I have known of many cases where brokers made no effort whatever to market the goods at the best price obtainable. They simply accepted the first offer they received, and in many cases secured the brokerage from the shipper and also from the buyer for giving them the first bid on the car. This is one of the features we have to contend with, as this practice tends largely to keep the market in a very unhealthy considtion, besides losing money for the shippers.

I also know of cases where brokers have sold dozens of cars at five to ten cents less than the market price in order to get them off his hands at a time when he was receiving a large shipment of apples; the apple deal meant a whole lot more profit to him than the commission he was making on the potatoes. Therefore the sacrifice was made at the expense of the potato shipper who consigned his stock. The average broker has very little interest in the market, other than to sell as many cars as possible in order to secure his commission. It is easier for him to sell five or ten cents below the market at the expense of the shipper.

Another feature we have to contend with, and one of the most unbusinesslike methods any shipper can adopt, is price cutting. The shipper will often load a car of potatoes not knowing when or where he will be able to sell. If by chance he should make a sale while loading, everything goes well; but this is not easily done. He holds the car on the track for a few days; perhaps the weather is cold; he becomes overanxious to sell, and begins wiring several buyers in Montreal and Toronto. If he cannot sell at his price the first day, he cuts the price five cents per bag the second day, and keeps on cutting the price until the sale is made. This is poor business, and not only affects the profits of the shipper who sold low, but every shipper in the business. It has a very demoralizing effect upon the market, and other shippers are forced to reduce their price on shipments going forward the same week in order to hold their customers.

I knew of a case where a New Brunswick shipper, after holding a loaded car on the track for five days, wired 27 different buyers in Montreal and Toronto, quoting at five cents per bag below the market, at a time when the market was overstocked and when Montreal and Toronto buyers were led to believe that there were 27 cars loaded in New Brunswick begging for a sale, whereas in fact there was only one. This indeed has a very demoralizing effect upon the market, and is a practice which should not be employed.

We all know that we cannot undersell one another and make a profit, and we all know that if we sell without profit, or without a sufficient profit to cover all contingencies, there is only one end, and that is FAILURE. There is still a good deal of sentiment in business; there always has been, and there always will be. Individual buyers will show preference to individual shippers, and cutting prices will not result in making sales.

In case of a car arriving in doubtful condition, or in case a car is shipped to a shady buyer who reports the car has arrived in bad condition, we should have our representative within easy reach of the car, and in this connection I might mention an incident that happened last fall, when a Western Ontario buyer wired the

shipper, offering $50.00 less, claiming the car had arrived in bad condition. The card index in the office showed a complete record of outturn of all the cars unloaded by this man during the last eight years. The details of loading were checked up and found to be O. K. The matter was taken up by wire with the nearest representative. The agent travelled all night, and the next morning the wholesaler came out on the sidewalk to see a strange customer tear open a bag of potatoes and dig into it like a terrier.

"Pretty nice lot of stock, that," said the stranger, looking up.

"The finest I ever saw," the wholesaler replied.

"In that case, I reckon they are worth all you agreed to pay for them." The agent grinned, handing his card to the astonished dealer. "Now, just add this to the bill," he continued, making a memo of his expenses covering the round trip of 200 miles, "and let me have a certified cheque for the amount. "I want to catch the next train back to Toronto." He got the cheque.

Another of the forces which tends to break the market is the unreliable broker. He tells his customer that he cannot sell below a certain price, but promises to report the car 10 bags short in order to make the price meet the bid of the buyer. We find numerous cases where a broker has made cuts of 10 to 20 bags per car in order to make sales at the price he was authorized to sell at. The potatoes being shipped in bulk, it is easy to report the car short. This makes bitter and very hard competition for a reliable firm to compete against, and it also makes it had for the reliable wholesaler to operate at a profit when he pays for all he gets in the car and his competing neighbor gets 20 bags for nothing This has not only been done once, but is growing to be a habit with some of our unreliable brokers, nd probably some of you shippers are wondering why your cars turn out short when unloaded.

I had an opportunity of discussing the potato situation with an agent of the Eastern Shore of Virginia Exchange last summer, and learned a great deal about their methods of selling, shipping, etc. From the very first, the founders of this wonderful organiztion had certain ideas to carry out for the benefit of the farmer and the consumer. The first thing they did was to set a standard of quality; and in order to maintain this standard they had inspectors at each of the 47 buying stations. If a farmer brought in potatoes that were poorly sorted or affected with rot, they were sorted over at the farmer's expense; potatoes that were not worthy of the brand of No. 1 or No. 2 stock were sent back to the pigs; nothing reached the market except good No. 1 or No. 2 stock. This firm sold 15,000 cars of potatoes last season; terms, sight draft by the buyer's bank before the car left Virginia. This buying sight unseen, as the boys used to say, means confidence in the seller and confidence in the quality of the goods. These potatoes were all put up in barrels of 165 lbs. net.

How many potatoes could the New Brunswick shippers sell on these terms? Not a single car. Why? Simply because we are years and years behind the times in the grading and packing of this most profitable commodity. We have no fixed standard of quality.

I feel that we should follow the rules and customs of those who have made a success of the potato business. We should sell our potatoes in barrels or bags, graded No. 1 or No. 2. By this method we would cut out all shortages by demanding of the railway companies a clear bill of lading, showing the number of bags or barrels contained in the car. We are surely entitled to a receipt from transportation companies for the number of packages we entust to their care. By this method unreliable brokers and buyers would not be able to make dishonest profits by reporting shortages at the expense of the shipper.

I have never seen a car of bulk potatoes shipped from Virginia, yet they have the largest and strongest potato shipping organization in America Neither have I ever heard of a car of Red Star Virginia potatoes being refused, or short in weight. Red Star Virginia potates bring 25 to 50 cents more per barrel than potatoes grown from similar seed in other states. The land of Virginia farmer has doubled in value. These farmers would not think of going back to the antiquated methods of selling ungraded stock in bulk. Their pocketbooks show them the wisdom of doing business under modern methods. We should profit by their experience.

I am, therefore, strongly in favor of shipping potatoes in packages, either bags or barrels of regulation weight.

The crop of the province must be kept under control and fed out to the different markets as required; otherwise we will have congested markets, bad slumps in prices, demoralization in the trade generally, with much uncertainty attending both the raising and shipping of potatoes.

I have in mind a plan whereby the cutting and slashing of prices, to the disadvantage of both grower and shipper, could be eliminated. From what we might call the New Brunswick Potato Growers and Shippers' Association having its head office located in the centre of the potato growing belt. All potato shippers to be members of this association and contribute towards the expense pro rata with the number of cars shipped. All potatoes to be sold through head office, and orders to be distributed amongst the different shipping members pro rata to the number of cars that each firm shipped during the last two seasons. All potatoes to be shipped in the name of the association, put up in packages, and graded. Each buying branch to submit its account each month to head office, to be scrutinized by auditors, and any differences of opinion to be settled by a Board of Directors. The selling price to be set by the association from day to day, based on information gained from its agents situated in the main markets on which they are operating. The buying price to be fixed from day to day after a careful study of market conditions.

If an association should be formed along these lines, the details could be easily worked out, nd by these methods we could cut down the cost of selling seventy-five per cent. We could cut out ninety-five per cent of our losses from short weight, rots, rejections, pilfering, etc. We could eliminate the slashing of prices. We could put the potato business on a firm, sound basis, which under present conditions is most hazardous to both the grower and the shipper. Our markets could be kept in a good, healthy condition so as to ensure both grower and shipper good prices for the season's crop. It is simply a problem of "He who serves best profits most."

A Successful Octegenarian Farmeress

By J. A. Macdonald, Hermanville, P. E. I.

We have very few woman farmers on the Island; perhaps had we more, farming would be in a more advanced state. Many women are left widows and try farming for a while, only to give it up, confessing their inability to carry on the work. Many widows, after their husband's death, give up farming altogether, and abandon the place in order to take up some kind of work in the city, usually Boston.

There is one woman, however, who has not followed the usual custom and thrown up the sponge when left to work out her own salvation. Mrs. Nancy McDonald, wife of the late Herman McDonald, of Hermanville, is conducting her large farm, all by herself, for the past ten years with great success. She grows big crops every year, probably the largest crops in the neighborhood; she harvests her crops early, frequently having her harvest secured before some of her neighbors have well begun.

The secret of Mrs. McDonald's success is that she keeps plenty of hired help and is able to get her work done in time. She plows every sod in the fall, and in the spring has only to cultivate and harrow in the grain. In the early spring, when others are beginning to plow, Mrs. McDonald starts the disc harrows, and goes over the fall-plowed ground thoroughly. When all the plowed land, about 25 acres each spring, is gone over she starts seeding oats. Oats is her principal crop, and she sows an average of 80 bushels each spring. She believes in sowing oats pretty thick. She sows 4 bushels of good Island black oats per acre. She says that on her soil, which is gravelly loam and somewhat light in texture, and naturally not a rich soil, thick sowing is essential. As she uses all the oat straw for feeding, she wants the straw rather fine, which would not be the case if sown thinly. Her farm fronts on the North Shore, and the saline breezes from the Gulf St. Lawrence over the oat fields cause the straw to be relished by all the animals, even the horses.

Mrs. McDonald does not use the disc to cover the grain, but uses one or two passings of the spring-tooth and finishes up with the tooth-harrow. With all her plowing done the previous fall, she seldom takes more than three weeks in getting in the seed in the spring. Her crops are oats, barley, potatoes, and turnips. The barley crop she grows on the potato and turnip ground, nd the previous crops being well manured the barley crop is always a good one. With the barley she sows timothy only, not being able to make a success of clover. Like the oats, she believes in sowing the timothy thickly. She says that she can get only one fair crop of hay, the second being always poor, while the timothy dies out after the first year. For these reasons she has adopted A THREE YEAR ROTATION on the fields near and convenient to the barn where she grows the potatoes and turnips. After cutting one crop of hay the field is plowed up and thoroughly disced for potatoes, etc., next year. She grows no potatoes for sale, and hence only plants about two acres on account of the difficulty in getting help to dig them in the fall. She also believes in thick planting of potatoes, some five to six barrels—about 16½ bushels—of sets per acre.

She does not always use stable manure for the potatoes, but can frequently get Kelp, as the farm fronts on the seashore. She finds Kelp superior to stable manure for the potato crop. This spring Mrs. McDonald has the greater part of her potato ground "kelped" and all eady for to plant the potatoes when the proper time comes. She uses her surplus potatoes for the stock, but more particularly to boil in the fall in conjunction with barley for pig-fattening. Boiled potatoes with grain or meal is the principal food used for pig-fattening in that vicinity. It would be a pretty dear feed this spring, as potatoes are now selling for 75 to 80 cents per bushel. But large quantities of potatoes were used on the Island last fall for pig feeding notwithstanding their high price. The barley crop is also used for feeding the live stock in conjunction with the potatoes and turnips. Mrs. McDonald does not grind a bushel of her barley, but feeds it always boiled. The grinding mills, she says, only crack the grain, and do not grind it fine, and barley, she asserts, should be ground very fine for feed; and as this cannot be done, she boils it. Boiled grain of any kind is as valuable—a little more so—as very finely ground grain. This boiling of the barley and of much of the potatoes naturally involves much labor; but Mrs. McDonald, old woman though she is, does not mind hard work.

She fattens five or six pigs each summer for market, but keeps no pigs in winter. She purchases young pigs in the spring, feeds them on milk, oatmeal, and shorts. During the summer she purchases middlings and cracked corn, and forces them long on grass, milk, kitchen slops, and this meal until potato digging, after which she begins boiling the potatoes in conjunction with the barley, and forcing them to maturity at a weight of about 200 pounds deceased weight. She manages to have the pigs off her hands before cold weather sets in.

Sheep is a good side line with Mrs. McDonald. She keeps a nice flock, and she finds that the lamb crop is the easiest money of all. Last fall her lambs averaged 115 pounds at a time of sale in the fall, or $6.50 each. Wool also fetches a high price. The sheep are protected from the ravages of dogs by never leaving them in the field at night. Mrs. McDonald has taught her sheep to come to the barn every evening where they are housed. She seldom has to go to bring the sheep home. She keeps salt, water, and other encouragements to the sheep to come home. They start for the field in the morning by themselves. A lane goes down along one side of the farm, and the gates to the field in which the sheep are confined are opened so that sheep may go in or come out at will, but not cows or horses. In this way the sheep are little trouble. In winter the ewes are fed oats every day, and turnips when they can be spared. They are fed mostly on oat straw, receiving little or no hay. The flock appeared to the writer to be in fine condition, mostly grade shropshires.

A good flock of hens are also kept, and a small dairy. The surplus butter is sold at good prices, as are those prevailing in the last few years.

The hired man is a terror to most men farmers, and the majority of farmers hire as little help as they can. This old lady keeps two farm hands the year round. One man is with her over forty years, and is one of the family; the other man is a married man and lives in a cottage nearby, though he takes most of his meals at the farm. Mrs. McDonald, besides overseeing and supervising all the farm work, does all the cooking for the men. She keeps no female help of any kind, and hasn't for several years. This is

(Continued on page 542)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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MAY 16, 1916.

DATES OF ISSUE.

June 6-20

BEAUTIFUL FARM HOMES

The planting season for trees and shrubs is now here, and it will not last long. Unfortunately it is the busy season for the farm work, too, when there seem to be dozens of things all of which ought to be done first, but we must not forget that we are human beings and that we can really starve for the beautiful sometimes without realizing it. We must have homes and we ought to have beautiful homes. Women and children, and men too, will actually love a home more if there are trees and bushes and vines to add to its charm—and the love of home is really at the root of a happy life. Looking at it from an entirely practical point of view, the money value of a place is actually increased by beautiful planting.

Put your time and money into permanent things—trees, shrubs, and perennial plants and vines. Then the work will not have to be done over each year.

The following suggestions, given by fhe Landscape Extension Department of the University of Illinois, will be helpful in planting so as to get the best effects:

"Plant trees on the border of the lawn for shade, to enframe the house, along the street for parkway effect, and on the property line to screen your neighbor's yard or to give privacy to your own. Avoid planting too closely and in straight lines. The Carolina poplar, box elder, and soft maple are too poor for ordinary use. Small trees as the red bud, flowering crabapple, and plums, used in groups of two or three in connection with shrubs, are valuable for screening.

"Keep the lawn open. Do not scatter flower beds or shrubs promiscuously. Plant shrubs about the foundation of the house, the angles of the walks, and the borders of the lawn. Use the more refined growing plants about the house and the coarser ones at the borders, where they are seen at a great distance. Use high growing shrubs at the corners of the house and porch and for accent in the wider parts of the border beds. Plant high growing species back of low growing ones. In planting close to walks and drives, use compact growing species. Do not plant shrubs as individual plants, but use several plants in a bed to secure a massed effect. Do not plant shrubs in a straight line, but place the plants irregularly so as to avoid a lined-up appearance. The side of the planting beds next the lawn should present a pleasantly curved outline.

"When getting trees and shrubs from the woods better results are to be had by collecting small specimens which will transplant easily, with small root loss. It is usually better to purchase nursery stock, which is not expensive (a tree 8 to 10 feet tall costing but one dollar) than to spend time and take the chances in collecting. Much the same can be said of shrubs. Collected shrubs are frequently 'leggy,' sparse, and of poor shape, while shrubs bought from the nursery should be bushy and compact."

Reliable seed houses advertising in the Maritime Farmer offer a list of hardy, permanent and reliable trees for the lawn, and shrubs for foundation and border planting, with the height which the shrubs attain, the time and color of bloom, whether suitable for shady places, and whether too coarse in texture for planting near the house. A list of desirable permanent vines is also given. As the Landscape Gardening Department of the University of Illinois is one of the finest in the United States, we can accept its advice as authoritative.

AS OTHERS SEE US

Under the above caption, a lady writer in The Farming Business says:

"I sometimes wonder if the woman who lives within a few block of the city stores, and who, presumably, can arrange her shopping trips for any one day in the week just as well as another, ever thinks of the fact that most farmers' wives can only come to town when the men come. This is usually on Saturday in this locality, though, of course, not every farmer's wife comes to town every Saturday. No, indeed! For many of them a trip to town is quite an event in the calendar—one to be thrice enjoyed—in anticipation, in realization, and in retrospection. Which is why I say that if the city women knew, or would stop a while to think of this condition, she would be considerate enough of the situation to plan her own shopping for some other day and leave Saturday for the salespeople to attend to the wants of their country customers.

This matter was especially brought to my attention during the last Christmas holiday season, when I saw country women who, I knew, had ridden many miles to town to do their Christmas shopping, and for whom it meant their last chance to shop before Christmas day, stand aside while the saleswoman waited on a city customer who could come again any number of times to finish her Christmas shopping.

For myself, though I belong in the class of the town dweller, and though I do sometimes go to town on little errands of Saturdays, I make it a point to notice whether I am keeping any country woman whose time may be limited from the clerk's attention.

PERFORMANCE COMES FIRST

"Handsome is as handsome does," is an old yet absolutely up-to-the-minute adage. Nevertheless, it is strangely true that such a superficial factor as the shade of color of an animal will sometimes be confused with true merit. Some well-meaning enthusiasts believe there should be a different classification in the American Standard of Perfection in Poultry for the light and dark barred Plymouth Rock strains. Others desire a separate rating for Holstein cattle in accordance with the amount of black and white they possess. The utility farmer who is striving to make a living from the performance of his hens or his cows has little use for exacting attention to these exterior qualities. The big thing to him is the number of eggs or the pounds of milk of high butter fat content that the animals will produce. The shade of the color may be secondary as a personal preference, but never of first importance, as some enthusiastic fanciers proclaim. In buying or selling animals the general farmer should never allow these points to cause confusion.

PLANTING WEAK SEED CORN

Although seed corn has tested fairly well at the Ottawa Laboratory, corn growers whose seed has not been tested would do well to take special care this season that their seed is of strong vitality. Owing to unfavorable ripening and harvest weather, some of last year's seed corn crop may be low in both percentage and vigor of germination. This seed should not be planted until the soil is warm and the weather at its best to encourage the growth of the young corn plant. The rate of seeding may be increased, but no amount of fairly weak seed is likely to give a good stand of plants unless the conditions of growth are most favorable.

WORK

Let me but do my work from day to day,
In field or forest, at desk or loom,
In roaring market-place or tranquil room;
Let me but find it my heart to say,
When vagrant wishes beckon me astray,
"This is my work—my blessing, not my doom;
Of all who live, I am the one by whom
This work can best be done in the right way."
Then shall I see it not too great, nor small,
To suit my spirit and to prove my powers;
Then shall I cheerfully greet the laboring hours,
And cheerful turn when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best.

—HENRY VAN DYKE.

FOOD FOR THOUGHT

Get up right in the morning. Go to bed right at night. Start with joy in your heart, hope in the future, kindness in your purpose. If it is a dark day, never mind; you will lighten it up. If it is a bright day, you will add to the brightness. Give a word of cheer, a kindly greeting and warm handshake to your friends. If you have enemies, look up, pass them by, forget and try to forgive. If all of us would only think how much of human happiness is made by ourselves, there would be less of human misery. If all of us would bear in mind that happiness is from within and not from without, there would be a well-spring of joy in every heart and the sun would shine forever. Try it!—Leslie's Weekly.

A good road between every farm and market is a reasonable and worth-while proposition.

* * *

If you intended to do a mean thing, wait until tomorrow; but if you are going to do good, do it now.

Features Gathered From the N. B. Women's Institute Reports

(Continued from last issue)

Chocolate Cove and Cumming's Cove.—Eighteen members joined at the organization meeting in July, 1914. Membership now 31. Funds in the treasury are accounted for in the following manner: $18.00 from sale; $15.00 of this went towards the Hospital Ship Fund and $3.00 to the Red Cross Society $4.00 from Birthday Party, and from this amount $5.00 helped to equip a hospital bed, $9.00 to purchase a gift for one of the soldiers from the community, and the remainder was utilized in buying Red Cross material. The sum of $10.00 was voted towards the Ambulance Fund. Twelve dollars was expended on repairing the cemeteries. Meetings are held in the hall, which necessitates paying $5.00 per year rental and 25c. a night to the janitor. The latter sum is raised by a tax of 2c. per night on each member present. Programmes are made out by a committee one month in advance, and each seems willing to do her part to make the meeting pleasant and profitable. The success of this branch is due mainly to the fact that a spirit of harmony exists among the members, each one being willing o abide by the decision of the majority. All may not be of the same mind, but each seems to realize the sound truth of the old saying: "United we stand, divided we fall."

Grand Harbor—Membership now 33, an increase of 10 over last year. Has a library of 61 volumes. Several members donated a volume and generous contributions were received from friends. A drama entitled "The Country Minister" netted $65.50 for the Institute. Doctors B. F. Johnson and J. F. Macaulay delivered instructive addresses on "Bad Air" and "Contagious Diseases." Miss Jonah, sent from the Department, gave demonstrations on Cake, Candy, and Fruit Salad. Annual reception of the Institute was a great success. The hall was prettily decorated with flags, banners etc., and a patriotic programme was carried out. Rev. J. E. Gosline gave an educational address on "What the Women's Institute Can do for the Moral Uplift of the Community." Throughout the year many members have given demonstrations in several lines of cooking. Roll call has been answered by quoting poetry and paying fees. Printed programme for the entire year much more satisfactory than planning from one meeting to another. In addition to 82 pieces given to Red Cross, one quilt was forwarded to Dr. MacLaren's hospital in France, 3 cases of clothing to the suffering Belgians, and $10.00 to the Hospital Ship Fund. Later $50.00 was forwarded towards the Ambulance Fund and $83.00 helped buy a Machine Gun.

Leverville.—Held its third annual meeting in July, 1914. Total membership now 44. August meeting held shortly after declaration of war, and Institute voted available funds for the aid of the Hospital Ship. Considerable Red Cross work accomplished, and causes. During the winter papers were read on "Scientific Housekeeping," "House Cleaning," "Cooking Turnips," and "The Education and Training and Children." Miss Jonah's demonstration on "Canning Fruit and Vegetables" was highly instructive.

Lord's Cove.—Organized August, 1914, with a membership of 9, which has since increased to 26. Mostly patriotic work. For Patriotic Fund $234.83 was solicited, and by means of suppers and donations $47.56 given to Belgian Relief. One box containing new clothing, and 13 boxes and 13 barrels containing clothing and food have also been sent to these suffering people. Plan putting improvements on building where meetings are held. This branch gave to Motor Ambulance Fund $90.20.

Pomeroy Ridge, Scotch Ridge and Gleason Road.—Organized July, 1915. At the first meeting of the Institute ice cream was sold, netting $10.35. A series of Red Cross teas has further swelled the treasury by $11.50. Total receipts to date $56.97, all of which, with the exception of $5.00, has been expended on material for sewing and knitting. Five dollars was given to the Ambulance Fund.

Salmon Beach.—Organized June, 1915. Membership 19. Programme and School Visiting Committees appointed. Ice cream socials have brought in -52.69, $20.00 going to the Ambulance Fund and the remainder to buy cotton and yarn. A box containing comforts for the soldiers was sent forward and more material purchased for future work. Out of the Institute funds, two copies of the Canadian Home Journal are taken and thoroughly enjoyed. Some subjects discussed include "Ironing Day Made Pleasant" and "The Widespread Value of Salt." This branch aims to give each member some work to do, so that each feels personally responsible for the growth and welfare of the Institute.

Stonehaven.—Organized June, 1915. with 14 members. Papers enjoyed at meetings are "Prevention and Cure of Colds," "Care of the Sick," "What is Charm?" and "Pickling." Bean supper netted $56.65, and from this sum material was bought and upwards of 100 articles made for soldiers and hospitals.

South Tetagouche.—Two monthly meetings have been held since organization, June, 1915, and the membership is 25. Social held at August meeting and collection taken up amounted to $9.45, with which Red Cross material was purchased. Interesting papers on "Bread Making" and "The Value of Women's Institutes" have been read. Eighteen articles for the soldiers have been forwarded so far.

Bass River.—Organized in July, 1915, with a membership of 15. Pleasant and profitable afternoons are spent at all meetings. Entertainment held on the evening of July 12th by the young men resulted in the proceeds being handed over to the Institute for patriotic work. Further money made at a recruiting meeting, when tea, cake and candy were sold. Discussion at one of the meetings on "Canning and Preserving of Fruit and Vegetables" was very hetpful to the many housewives present. Busily engaged in knitting for the soldiers.

Ford's Mills and Beersville.—Organized October, 1912. Roll Call is answered by 28 members, with an average attendance of about 15. All members wear the N. B. W. I. pin, and nearly all subscribe to the Canadian Home Journal. Considerable sum of money has been expended on the Agricultural Hall. Through the summer, members worked for the different needs of the soldiers, Red Cross, Patriotic Fund, etc. Ten dollars was given to the Hospital Ship Fund and two boxes containing comforts sent to the soldiers. At Christmas a musical programme and social was held in the school house, the proceeds going to the Belgian Relief Fund. At the Bean Supper held in March another substantial sum was raised for Red Cross. In order to contribute towards the Motor Ambulance Fund a Basket Social and Fancy Sale was held in the school grove in August. The Institute here has promoted sociability and work "For Home and Country" is being accomplished with united effort.

Buctouche.—At last November's meeting, a discussion on "How to Increase Our Funds" led to money being raised and disposed of in the following ways: Two concerts, one held at Buctouche and the other at Rexton, netted $159.10; of this amount $25.00 was sent to the Disablement Fund, $73.00 to the Motor Ambulance Fund, and $30.71 to assist in buying a Machine Gun. The sum of $15.50 was realized through the sale of flowers. To the Belgians were sent six boxes of clothing valued at $418.85. The remainder of funds was spent on material for the soldiers, 50 articles having already been forwarded to them. The members greatly enjoyed making a quilt for the first young lady married from the Institute, and it was no more than finished before it was needed.

Harcourt.—Fourteen members enrolled at organization meeting, July, 1915. Present membership 20, with an average attendance of 12. Special meetings held to sew and knit, and in order to buy material a tea held in July gave $45.00 for this important work. In order to further increase the funds the members divided into groups of four, each group presiding at a small tea held in the Red Cross sewing rooms every second week. These teas were quite well patronized, and the Red Cross funds considerably augmented thereby. By means of an ice cream social held in August, this branch was able to forward $22.00 for the Motor Ambulance Fund. The meetings have always been pleasant, and instructive discussions have followed papers read on such subjects as "Pickling and Preserving," "First Aid to the Injured," "Dangers of the Common Cup in School," etc. A nicely arranged programme for the year was presented by the directors at the August meeting.

Bloomfield and Central Norton.—Organized August, 1914. Membership increased from 11 to 21 members. Patriotic work confined to knitting, and 48 pairs socks forwarded so far. Meetings have been made very interesting with papers written by the members, followed by discussions and music. Some of the subjects taken up were: "Household Economy," "Butter Making," "Books Every One Should Read," "Early Planting," and "Home Nursing." Miss Jonah visited this branch in May, giving a demonstration on "Hospital Nursing in the Home," which all thoroughly enjoyed and was the means of bringing in new members

Central Greenwich.—Organized October, 1913. Membership 19, with an average attendance of 11. Members interested in patriotic work and never refuse their aid in knitting and sewing. In all, 143 articles have been sent to the soldiers and 18 children's garments to Queen Mary's Guild. By selling 100 "Allied for Right" buttons, funds further increased. Last year the programmes were printed, but to economize on the cash this year's programmes will be typewritten. Socially our meetings are worth the trouble, if we were not benefited in any other way.

Clifton.—Third annual meeting held July, 1915. Total membership 25. Roll Call is answered in various ways, such as funny stories and quotations on "Thanksgiving," "Christmas," "The New Year," "Spring," and "Patriotism." Found it an advantage to have the programmes prepared a year in advance, as it gives the members a better chance to understand the year's work. By means of a supper and sale, $35.00 was given to the Clifton Hall organ fund. At a meeting addressed by the Supervisor last winter, tickets were sold on a rug, and the proceeds together with the collection taken up amounted to $5.50, which was given to the patriotic fund. The "Allied Tea and Social" held in Clifton Hall was a great success. Small tables were arranged to represent the different nations of the allies and the young ladies waiting on the tables were costumed to correspond. The hall was decorated with flags and the photos of the brave boys having gone to the front from Clifton and vicinity. Of the $60.00 cleared, $50.00 was given to the Women's Institute Motor Ambulance Fund. Through the efforts of the young ladies, a Basket Social and Dance cleared $16.00 for the Soldiers' Disablement Fund. The members are all interested in the public schools, and at the October meeting the school teachers from the Consolidated school were invited to attend. Papers were read on "Where Home and School Meet" and "How Women, Working Collectively and Individually, May Aid the Public Schools." This meeting resulted in the members meeting certain afternoons to make cushions and rugs for the school vans. Other interesting addresses include "The Origin of Thanksgiving," "Christmas Customs in Other Lands," "School Gardening," "The Spring Garden." Programmes for this year include such subjects as "Sanitation in Home and School," "Care and Precaution in Contagious Diseases with the Board of Health Regulations," "National Ideals and Characteristics," "Music with Stories of Famous Hymns and Songs," "Woman's Work of Today," "Woman as a Citizen," and "Business Methods for Women." By selling patriotic buttons $12.55 was realized for the Motor Ambulance Fund. Through the efforts of the Institute a beacon light was placed on Clifton Wharf. Six copies of Canadian Home Journal taken by the members, and all agree it is a splendid magazine. Seventy-three pieces for Red Cross and soldiers have been completed and sent forward, and an additional bolt of grey cotton and shaker flannel have been purchased. Yarn is always kept on hand for knitting.

Corn Hill.—Organized October, 1913. Meetings have been held every month in the two years. Public meeting addressed by Mr. Andrew Elliot, of Galt, Ontario, on "The Boy in the Home," was a great success. These public meetings are a stimulus and great help in the community. Much pleasure and profit derived from exchanging visits with the Havelock Institute. Since last convention, by means of socials, etc., the sum of $158.69 has been raised. With the exception of $10.00 expended on dishes for the public hall, money has been donated to patriotic causes. On Arbour Day a number of the members visited the school and made a picnic for the children. They felt they were fully repaid for their trouble by the pleasure the children seemed to derive from feasting on the good things set before them, after working in the school garden all day. The "Girls' Meeting" in June was a grand success. The girls took charge of the programme and served refreshments. The roll call was answered by "Pointers for Girls." A "Grandmother's Meeting" was also held when old-time recitations and songs and a well-prepared paper entitled "A Mother's Duty to Herself" made up a most entertaining meeting. A luncheon of old-time cooking was served. This meeting was such a decided success the grandmothers are down for another meeting this year.

HORTICULTURE.

EVERBEARING STRAWBERRIES

Some persons are so ultraconservative they cannot realize that the world moves. They fail to grasp facts that are already settled beyond controversy. Does it ever occur to these people, I wonder, that milk, eggs, and berries—things that enter so largely into the make-up of our daily meal—were primarily not intended for human food, but simply a part of nature's scheme of reproduction? Originally, the cow gave her milk, like other animals, only until her offspring was weaned. The hen laid only eggs enough to hatch out a brood or two of chicks. But man, ever striving to divert nature's channels to his own uses, has, by process of selection, cross breeding, and high feeding, succeeded finally in developing both a cow and hen capable of administering to his diet throughout practically the entire year.

Similarly, the fruit of the strawberry plant was but nature's device for perpetrating itself, in having its seed scattered broadcast by the birds that fed upon it. But here again man stepped in and appropriated it unto himself. Improving the berry in many ways, he has nevertheless been completely baffled in endeavoring to prolong—as in the case of cow and hen—its all too short period of fruit production until nature came to the rescue.

The miracle was brought about presumably through the medium of some tiny insect, injecting into the blossom of a cultivated strawberry plant of Samuel Cooper, at Delvan, N. Y., pollen obtained from some hardy little berry of field or wood. From the seed of this hybrid was developed the nucleus of a race of Everbears destined to revolutionize the fruit markets of the world. It is not generally understood as yet that these Everbearers not only bear throughout the entire growing season from June till ground freezes in the fall, but that they yield an abundance of fruit the year they are planted, requiring but three months to reach maturity, instead of a full year, as with the common varieties.

Even the unconvinced are compelled to admit that the flavor of these berries equals the choicest of the "June-onlies." Another established fact is that frost and drouth have scarcely any perceptible effect with them. Were it otherwise they could not continue fruiting way in full blast as they do during the dry months of the summer, nor well along in autumn until the ground is actually frozen.

There are croakers and doubters, of course. These, like the poor, we must always expect to have among us; and others, too, that never succeed at anything they undertake; but all will come around in due time and fall into line as soon as plants enough can be secured to supply all comers. Growers will then probably have nothing else to offer, and why should they? The improved Everbearer possess every virtue of the common berries that fruit only in June, and so many more in addition that the present scarcity of the former is the sole excuse for the existence of the latter.

Reverting again to the cow and hen, one must bear in mind that to obtain the results accomplished high feeding is an absolute necessity. Were these creatures allowed to relapse again to their wild state—to cow to browse on leaves and dead grasses, and the hen dependent for her food upon what stray insects and weed seed she could find—the yield if milk and eggs would diminish very rapidly.

The same applies precisely to the Everbearer. This feature is often overlooked, with its consequent disappointments. To get satisfactory results, they cannot be treated with impunity, as many do their common berry plants. Planted in the same rich soil, and given the same culture as celery and asparagus, and the yield will be beyond all expectations.

The seemingly extravagant things that have been from time to time written of these wonderful plants are mostly true, but people having been fooled so often in the past with nature-faking novelties, it is not surprising that the average man is slow in appreciating the value of his new inheritance. Perhaps it is as well so, for otherwise the price of the Everbearers would have risen to such a fabulous figure that none but the well-to-do could have secured them.—C. S. Kempton, in New England Homestead.

DUSTING FRUIT TREES

I was much impressed with the address delivered on "Dusting Fruit Trees" by Professor Reddick, of Cornell Agricultural College, before the New York Fruit Growers' Association this year. Professor Reddick stated that after five years' experimenting with the dusting of fruit trees for scab and insects affecting the fruit and foliage, he was convinced that as good results could be obtained as by spraying the trees with liquid sprays. The expense of treating an orchard in this way is about equal to that of the common method of spraying. Two men and one horse can dust thirty acres a day of full-grown Baldwin trees. In this way a great saving of time is effected, besides getting the poison on the tree at just the proper time.

Dusting machines can be attached to an ordinary spray pump engine, and are offered by many manufacturers at prices ranging from $25 to $120. Up to the present I understand that they have not been able to produce a dust that would be of sufficient strength to destroy San Jose scale or Oyster Shell scale, but Professor Reddick intimated that he hoped to obtain a dust which would be equal to such demands.

The material used in dusting is, I understand, composed of sulphur, arsenate of lead, and gypsum, which is ground into a fine dust that will pass through a two-hundred-mesh sieve. This mixture is blown out through a pipe, and floats away like smoke through the air, and if applied on the wind side of a tree will thoroughly cover it.

It was the general impression among the fruit growers at the New York convention that the dusting of orchards may in time do away with the liquid spraying of trees, particularly in orchards not affected with scale. I would, however, advise the fruit growers of Canada that they stick to the old and thoroughly tried sprays until our Canadian Experiment Stations have proved that dusting is satisfactory under all climatic conditions.—D. Johnson, Dominion Fruit Commissioner, Ottawa.

TWO FRUIT PESTS TO WATCH FOR

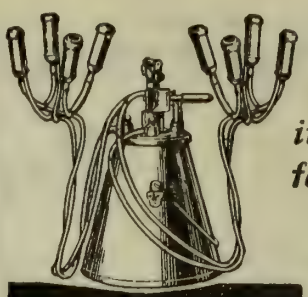
Last year I warned the fruit growers of Nova Scotia of a widespread outbreak of Canker Worm, which would damage many orchards in the spring of 1916—that warning was based on the reports of our brown-tail moth inspectors. This year reports from the same men say that the infestation is increasing, and that a great amount of damage will be done this spring. Some few owners have already applied tanglefoot bands. Where these bands were not applied, very thorough spraying in 1916 is all that can now be depended upon to control Canker Worm. If you saw any number of light grey moths about the trunks of your trees last November, you can depend upon it that they will eat more or less of the leaves from your trees this spring, and cause you some loss.

In regard to spraying for Canker Worm, we, of course, all know what a hard insect it is to poison. When more than half grown it apparently thrives on arsenic; so in order to control it we must have the leaves thoroughly coated with poison when it emerges from the egg and begins feeding, for it is then comparatively easy to kill. Most of the Canker Worms emerge about five days before the blossoms show pink, so if your orchard is infested put on the pink bud or second spray a couple of days earlier than usual, or else retard your semi-dormant or first spray until the leaf is as large as a twenty-five cent piece, using in both sprays a larger quantity of poison than usual.

The present outbreak is wide, covering the whole Annapolis Valley, and in a general way only the orchards that have been heavily sprayed for the past two years are in any way free from them.

Tussock Moth

We are now on the eve of another outbreak also of Tussock Moths. Inspection has shown this outbreak to be widespread, probably heavier in the West end of the Annapolis Valley than in the East. The Tussock Moth was particularly bad in the East end of the valley in 1906; the next outbreak in 1912 did not affect the valley so much. This present outbreak will damage a few orchards in 1916, but will not reach its height until 1917. In one orchard this year I found a large amount of fruit disfigured by the feeding of the larvae. The injury might, at first glance, be mistaken for that of the Fruit Worm, but the feeding is



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That is the way M. C. W. Kay of Sussex, N.B., sums up his experience with the

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Replying to your query about the milking machine you have installed in my barn, I beg to say that same is working to my entire satisfaction. It does all that you claim for it. I find that all the cows that had sore teats before using the machine are now all right. The cows just fall in love with it and I would not be without it at double the price it cost. I will be pleased to reply to any one you may refer to me and help them solve their labor problem. Thanking you for the courteous treatment you have given me, I am,

Yours truly, M. C. W. KAY.

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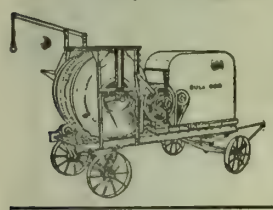

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done later and does not heal out so perfectly. The apple is seldom deformed, the edge of the eaten areas are irregular, often extending irregularly over half of the apple.

The eggs of the Tussock Moth were deposited by the female about August 30, about 150 eggs in a cluster, on the old pupa case, and covered with a frosting or froth to protect them. They may be found on any part of the tree, usually on the fruit spurs of the apple. The young larvae will emerge during the last week of June and feed for two or three weeks on apple leaves, later feeding on the fruit to a certain extent. In order to control Tussock Moth we must put poison into our last summer spray, or that going on during the last week of June. If the eggs of the Tussock Moth are in any way numerous in an orchard, it would pay to put in a larger quantity of poison than usual in the last spray.—G. E. Sanders, Entomological Division, Annapolis Royal, N. S.

HOW THE CHINESE FARMERS PRODUCE CELERY

Since early in November the Chinese farmers have been shipping a lot of fine celery from their small farms near Palo Alto, Cal. So fine is their product that it has become the standard for the San Francisco market. Just outside the city these Celestial farmers have their farms located. The soil is a heavy black loam, much the same as the gumbo in the South and in the valley of the Missouri River. In this rank soil the celery thrives.

Michigan and Colorado produce fine crops; in the southern part of California there are extensive fields. That grown in the fields of the middle west is fine as to flavor, crispness and general good qualities, but it is much smaller than the California products. Each stalk or head produced in the Palo Alto fields will average two and two-quarter pounds in weight. Every week during the shipping season about forty-eight tons of celery have been shipped to the San Francisco market and in addition the local market has been supplied. Returns to the Chinese companies have been about $550 a week, the total for the season being nearly $10,000 from a comparatively small area under cultivation—less than ten acres.

The reason why the Chinese seem to have a monopoly of this line of farming is that white men are averse to working in the damp, mucky soil necessary for the plant. When working among the plants it is necessary to wear rubber boots or go barefoot on account of the dampness, but the Chinese seem to like this sort of thing.

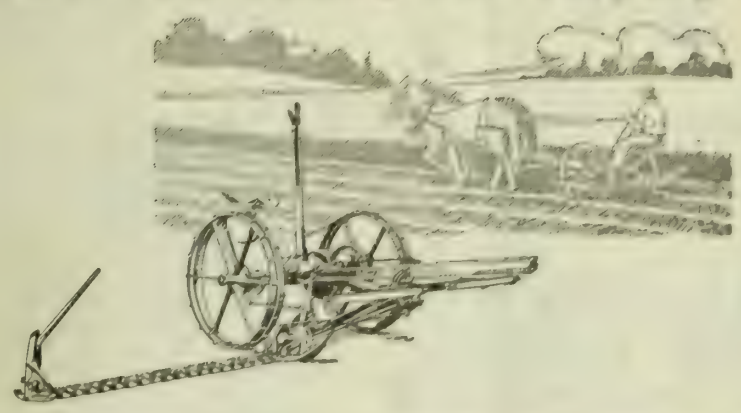
The method of growing is different from that followed in the eastern part of the country. At the start the plan is the same. Small plants are first grown in boxes. From these they are transplanted early in the growing season to the maturing bed, made up of a series of trenches. In Michigan these trenches are about two feet deep and as the plants develop the trenches are filled in, the plants hilled up, the result being that the mature celery is beautifully bleached and is very tender. When it comes to harvesting, a great deal of digging is necessary, which adds to the cost.

But the Chinese dig no trenches. They set the plants out not more than six inches apart and on a fairly level field. As the plants develop in size, the farmer binds loosely around each one a cylinder of matting varying in height from six to twelve inches. As the plant grows it fills the matting casing and when the leaves reach above it the growth is so dense that sunlight scarcely can penetrate between plants either in the same or adjoining rows. Bleaching results as a matter of course, and likewise the necessary tenderness, crispness and flavor are retained. The harvesting is a much easier process, because the plants can be cut off just below the surface of the ground, obviating all work of excavation necessary with the trench plan.

It takes an abundant supply of water for celery In getting this necessary supply the Chinese have shown ready adaptation to modern methods. At the Palo Alto fields they have sunk a deep well, and water therefrom is pumped by electric power into flumes that convey the fluid to the fields.

Naturally their success has attracted considerable attention. Buyers from San Francisco come down and bargain for the standing crops, so there is not the slightest possibility of not finding a market. A larger tract than that already occupied by the present farmers has been subdivided, and this year will be farmed by several other companies.

Are You Ready for Haying?



Are you all ready to make the most of this year's hay crop? Are your mowers, rakes, side delivery rakes and loaders all ready to do a good season's work? Look them over now while there is still time to get repairs or to get new machines before the crop is ready to cut.

If you need new machines, don't fail to call on the McCormick local agent before you buy and see the McCormick mowers, dump rakes, side delivery rakes and loaders. There are features in McCormick haying machines that save work and make money for you. The all-steel side delivery rakes and steel-frame hay loaders are two of them. Don't fail to see them.

Don't take chances with imitation repair parts for your McCormick machines. Get the genuine. Then you are safe, because there is no difference in size, shape, or quality between McCormick repairs and the same parts on new McCormick machines.

The McCormick local agent has some specially good hay tools for you to use this year. Drop in and see him, or write to us at the nearest branch house for full information.

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VEGETABLES WORTH TRYING

Celeriac and hamburg parsley are vegetables not commonly seen in the home garden. Both are well worth raising and should have a place along with the beets, carrots, and parsnips. Celeriac is known as turnip-rooted celery and is grown in much the same way as celery, except that no blanching is necessary. Seed should be sown in a seed bed and transplanted to the permanent rows, allowing the plants to stand six inches apart. Any one who cares for celery will find this an agreeable addition to various soups and stews. Large Smooth Prague is the variety most commonly grown.

Hamburg parsley produces a root that resembles a small parsnip. It should be planted early in the spring in a deep rich soil. Soak the seed in warm water for a few hours, as all varieties of parsley seed are slow to germinate unless this is done. Thin the plants to stand four inches apart in a row. Both of these vegetables are quite free from insect enemies. Hamburg parsley, like celeriac, is largely used as a flavoring for soups. Both of these vegetables keep well through the winter if taken up and stored in dry sand in the cellar—C. H. Chesley.

SEED POTATOES

The right kind of potatoes bring better prices than the wrong kind, and the right kind can usually be grown with very little added trouble. The right kind is the kind the public wants.

The way to grow them is to plant the kind of potatoes you wish to grow. This means careful selection from the hills, observing the following rules:

Select only from hills in which a larger part of the potatoes answer the description mentioned. Potatoes from such hills are more certain to breed true to type.

Select potatoes weighing from five to eight ounces.

Use for seed no potatoes grown in fields showing a considerable amount of wilt or rosette.

Avoid potatoes showing brown ring discolorations at the stem end.

Save for planting no potatoes which are bruised, cracked, or decaying, or which show discolorations at stem end.

Store carefully in moderately warm, dry, and well-ventilated place.

Treat with corrosive sublimate four ounces to thirty gallons of water—for an hour and a half before planting.

Color is the greatest need of the apple grower. In order to get this, you must prune so as to let the sun, which gives color, into all parts of the tree. The later cultivation is kept up the less color you will have.

One of the best ways to control insects on strawberries is by rotation of crops and clean cultivation.

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DAIRYING.

THE UDDER OF THE DAIRY COW

As a rule not enough attention is given to the care of the udder of the dairy cow. We all know that when anything happens to this delicate organ the chances are the the usefulness of the cow is practically at an end. And we do not like to own a cow with one quarter of her bag gone or otherwise out of commission. But we do not think enough about it beforehand to take proper precautions to avoid the loss.

One way the cow may get hurt in the udder is by having another cow step on the part which may happen to lie on the stable floor as the cow is resting. I have known this to happen a good many times, and it is a serious matter. How can it be avoided? The best way I know of is to give every cow a roomy stall, which seems to me to be the ideal way of stabling cows, or by placing a good partition between every two cows, so that adjoining animals may not tread on each other.

Another way the udder may be injured is by having it struck by some man who has the care or the milking of the creature. To have the udder hit by the fist of a cross or angry man, especially when it is filled with milk, is a dangerous thing; and still, even we ourselves do not watch the movements of the hands we employ closely enough to know what this is done, or we are so indifferent about it that in case we do realize what has been done we do not do anything about it. The fact is, no man who wilfully strikes the udder of a cow, or throws a stone at her that hits her there, ever should be permitted to deal with cows. In our day and generation it is too costly an operation to get a good dairy cow up through to service without having her ruined in any such way.

Again, the cow may suffer from udder trouble through incomplete milking. One of the worst cases of this I ever saw was where an old farmer, by reason of stiffened hands, was not able to strip his cows perfectly dry. A little milk would be left in the udder every time. This progressed until one of the cows came very near losing one quarter of her bag. It was almost as hard as a rock and very little milk came from it. I took the cow for a couple of months myself, and by careful handling, drawing every drop each time and working at the hardened udder faithfully, I was able to bring the quarter back to very nearly a normal condition. She gave quite as much milk out of that quarter when I left her as she did from any part of the udder. It shows that care is almost indispensable.

When anything happens to the udder of a cow the best thing I know of is to wash the part with cool or hot water. Some would put a little corn meal in the water, but it is a question if there is any virtue in this. The rubbing is what helps most. By being very persistent and working and kneading the udder every little while, the swelling may, in many instances, be taken out and the usefulness of the udder restored.

Sometimes in the spring of the year, before a cow begins to give milk, the udder will get quite hot and swollen. There used to be a theory that no milk should be taken before the cow dropped her calf. For my part, I believe it better to milk the cow a few times rather than to run the risk of some serious inflammation of the udder. The washing in water and careful manipulation is very helpful in this, as in the case of definite injury.

E. L. VINCENT.

INTELLIGENT SELECTION OF COWS

Not only interest but real value at taches to the question of carefully noting the individual performance of each cow in the herd. It is only after keeping a complete record that one finds such a strange contrast as this: of two five-year-old cows in one herd, both fresh the same day, both dried off the same week, one gave 5,454 pounds of milk and 213 pounds of fat; the other gave only 3,570 pounds of milk and 153 pounds of fat. Most probably the owner would not have taken on a bet at the beginning of the season that the one cow could bring in over twenty-two dollars more than the other, but she did.

In another section, of two cows the same age, one gave 8.430 pounds of milk and 362 pounds of fat; but the other gave only 1,690 pounds of milk and 67 pounds of fat. Is there a difference of eighty-eight dollars in the earning power of any two cows in your herd?

Building up a profitable dairy herd includes the selection of good individual cows. The rational method is to weigh the milk and test samples regularly for fat. Write to the Dairy Division, Ottawa, for information on cow testing, so that your selection may be intelligent, so that your profits may be larger.

RECORD COWS CONTINUE TO PRODUCE

Is the usefulness of a dairy cow ended when the big milk production records for which we strive in these days have been made? The American Guernsey cattle club has studied the history of 63 Guernsey cows that have completed records of more than 700 pounds fat, and have fou d little to substantiate this idea where rational feeding is done.

Of the 63 cows whose history was traced, three have four official records and one has produced 10 registered calves, of which four have been born since making the last record. One of the others lived to be 10 years old and produced six registered calves, and another died from blood poisoning at nine years old.

There were 10 cows with three records each, eight of which produced progeny after their last record, and one of which produced four calves after completing a record of 83 pounds fat. There are 28 cows that have made two records. Of 17 remaining, 11 have produced calves since making their record, or are safe in calf. Of the 63 there were 22 that have only one offi- producedall ry2 cmfwypshrdlucmfw cial record. Of these all but three have produced calves or are safe in calf since completing their test.

GARGET IS CAUSED BY GERM IN TEAT DUCT

At one time it was thought that garget was due to mechanical injury to the udder, and while this cause can not be entirely eliminated, it seems the teat duct.

evident from all recent work that prac- It is well known that sterile milk is tically all cases are due to infection, not to be had even when removed unthe germs gaining entrance through der the most rigid precautions. This

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indicates that germs are to be found in the udder most of the time. Under ordinary circumstances these bacteria do little harm, but occasionally a harmful one gets in and sets up severe inflammation. This is especially likely to be the case at about the time of freshening, or during the time the cow is drying up. At both periods there is an accumulation of milk that is not drawn out regularly and consequently it forms a good medium in which bacteria can live. When there is much accumulation of milk, milking should be done in order to get out these foreign organisms before they become harmful. While it is not necessary at the time of drying up to encourage milk production by milking dry, yet it is much better to milk out a small quantity so as to get all the organisms out of the sinus, than it is to allow it to accumulate for several days. —I. E. Newsom, Colorado Agricultural College, Fort Collins, Colo.

REASON FOR SLIMY MILK

A reader complains of a cow whose milk gets slimy as it grows sour. The ration of four pounds wheat bran, five pounds middling, and one pound cottonseed meal to only one pound corn meal is pretty strong in protein. Cut down a little on middlings and add a little more corn meal.

There is nothing in the feeding, however, that would account for the fact that the milk gets slimy. This often is due to a bacterial infection that may come from the cow and may be due to the surroundings under which the milk is kept. So long as it is sweet and rich while fresh it doubtless is a wholesome food.

Try using extra care in scalding and sunning all milk utensils and, if possible, keep the milk in a different place. If the trouble is with the cow it doubtless will disappear when next she is fresh.

PLANNING FOR CALF CROP

The best season of the year to have cows freshen depends upon the purpose for which the milk is to be used. If you are supplying milk to a cheese factory, it is best to have the cows freshen in spring. If the whole milk is to be sold in the market, have the cows freshen at different periods so as to keep production constant to meet the demands of your customers. While this can be regulated to some extent, it cannot always be entirely controlled.

If the principal object is to produce the greatest quantity of milk of best quality, and with most profit, the cows should be bred so as to drop their calves in the fall. Fall calves are more easily reared and make better cows than those born in spring or summer.

Right Kind of Shelter and Feed

The cow or heifer freshening in fall needs healthful and nutritious feed. At this time we stable them, give them good care and good feed, and of course, get good results. With the right kind of shelter and feed they may be expected to keep up the milk flow all winter. Then when grass comes in the spring they will respond with increased milk production.

Midsummer days are good resting periods. With short pasture and flies to contend with, the milk flow is usually light anyway at this time. By having the calves come in early fall we secure the largest amount and the best quality of milk at a time when prices are best, while the least amount and poorest quality comes when prices are low.—W. H. Parrish, Coshocton Co., O.

FEED DRY COWS

The time to do the best work with the dairy cow is when she approaches her freshening period. Then you can best take advantage of her maternal instincts. She should have six to eight weeks' rest previous to calving. The most profit I ever make from grain fed to cows is when they are dry. In giving this ration, keep three purposes in mind: First, feed to rest the digestive organs, for she has doubtlessly been overworked the past ten months. Hence give soft, laxative, succulent feeds. Second, feed to store up fat and body energy. Third, provide carbonaceous feeds, as well as protein, for the welfare of the cow herself and the calf. Within two or three days of calving change to a soft mash feed. This is the time I aim to teach them the joy of bran mashes. Good mashes can be made of bran, ground oats, and oil meal in equal parts.

After calving, start the cow on five or six pounds grain. If she is poor in flesh, feed mostly protein. Then skip one day and increase the ration by one-half pound. It is important to remember a cow will make as great a response on one-half to one pound increase in grain as on three or four pounds or more. Work along on this basis until you get the cow to the climax of her production within thirty or forty days. If you have not reached that point at the end of this time, you may as well give up until the next freshening period. When the climax is reached, it is simply a case of varying feed and watching the cow and scales to keep up the production. Whatever changes are made, make them gradually.

There is much misunderstanding about a balanced ration. Many people write asking to balance a ration for their dairy herd. Such a thing is impossible. The only man who can balance one is the man who feeds each cow. A balanced ration for the same

(Concluded on page 544)

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between the
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THE difference between a modern De Laval and any other cream separator is apparent at first sight. And if you will take five minutes to compare the separating bowl construction, the size, material and finish of the working parts, particularly those subject to wear, the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, you will still further *see the difference.*

Then if you go a step farther and turn the cranks of the two machines side by side for fifteen minutes, running milk or water through the bowl, you will see still more difference.

And if you will run the two machines side by side in practical use, as any De Laval agent will be glad to have you do, the De Laval one day and the other machine the next, for a couple of weeks, you will see still greater difference in the work of the two machines.

Every De Laval agent considers it a privilege to show the difference between the De Laval and other separators and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it. If you don't know the nearest De Laval agent write to the nearest office as below.

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LIVE STOCK.

WEANING THE PIGS

"Weaning" means to accustom gradually to the deprivation of something hitherto enjoyed. To many pig keepers it appears to mean letting the young pigs have their fill of mother's milk today and none at all tomorrow, when they must put up with quite a different kind of food. It is no wonder that in such cases weaning time is a time of illness—"fits," or convulsions, and indigestion—and death in the sty. When the time comes for weaning, it should not be done quickly, an abrupt change is a great shock to the pig's digestion, and besides it sometimes causes the sow great suffering. Begin by shutting up the sow in the day, and allow the youngsters free range; at night allow them to sleep together. After a few days they may be turned together only every other night In the meantime the sow is fed, for the most part, on dry food, or something that will not cause a full flow of milk, while the pigs are fed all the slop they will eat. In this way the pigs are weaned, scarcely knowing when it is done. There is no check whatever in their growth; while the sow, being fed on maize or some stimulating food, is ready to be bred again in a few days. That stage in a pig's growth that requires the most skill is from the time the dam is bred to the time the pig is weaned. If well handled up to the weaning time the pig will stand some neglect and careless treatment without seriously impairing growth, but there must be but little, if any, foolishness before this time if the best results are to be obtained. The aim is to feed the young and growing pig a kind of food that will promote the growth of muscle and bone. As it approaches maturity, or the time when it is to be marketed or slaughtered, the proportion of maize, that great fat-former, may be gradually increased. During the suckling period feed the pigs largely through the sow, and see to it that the sow is not a bag of bones at weaning time. After weaning, feed the pigs for growth, but gradually increase the fat-forming foods as the pig approaches maturity. Push from the start, and never allow a pig to stop growing.

DEHORNING THE CALF

The best plan of dehorning cattle is to dehorn the calf. Most breeds of cattle grow horns, and most cattle owners prefer to have the cattle hornless; consequently to have the cattle that you want it may demand an operation in order to get them to suit your fancy. The dehorning of a grown animal is often a pretty difficult job; it is always an unpleasant operation for both animal and owner. The sore head and the treatment of the head to protect it from the annoyance by flies, unless operated on in cold weather, is a part of the disagreeable feature of dehorning of grown cattle.

All this unpleasant treatment may be avoided by the use of caustic potash on the new-born calf. The time to use the calf dehorner is while the calf is yet a few days to two weeks old. The embryo horn can be killed at an older age, but the easiest age is from four days to ten days old and before the horn button has become attached to the skull. It will be observed that there is on the calf of all horned breeds of cattle a little horn germ that is loose in the skin where the horn develops. This little embryo horn resembles a button to the touch of the finger in its early stage, and can be moved with the skin by a pressure of the finger.

The treatment recommended is caustic potash or "stick potash." This can be had at any drug store at very small cost, and one stick if taken care of will dehorn a dozen calves. Rub the potash on the horn button, first removing the hair for a space as large as a half dollar; apply it carefully by rubbing directly on the button. The potash should be moistened slightly and rubbed over the skin covering the horn button, until the skin shows distinctly the effects of the caustic. One application should kill the horn germ. It is necessary to wrap the stick of potash with something to protect the operator's fingers. There is some danger of putting on too much and causing the oozing of water to trickle down over the face of the calf, with a chance of its getting into the eyes. This only occurs where too much is used. Better give two treatments ten days apart in case it is necessary than to overdo it by causing too much of this discharge.

NOT ENOUGH SHEEP ON GLOBE TO FILL DEMAND FOR WOOL

That no department of agricultural industry offered the opportunities that were to be found today in sheep breeding was the opinion given in an address at the Ottawa Winter Fair recently by Lieutenant-Colonel Robert McEwen, of Byron, Ont. Colonel McEwen spoke of lambs being now up to $11.75 a hundred, and the average profit per ewe, in meat alone, being about $15 net, this indicating the money to be made in the business.

Meat, however, was not the only product of the sheep, for wool that a very short time ago was worth only 10 cents a pound, unwashed, was now selling at 35 cents. The demand for wool for army purposes was heavy and the life of this wool was exceedingly short, for much of it had to be purified by fire after being in the trenches a short time. The embargo placed on wool by New Zealand would also help the wool market, he said.

Colonel McEwen commented on the beneficial results following the distribution, by the government, of sires and ewes a few years ago. In Manitoba, where, on account of the war and need for economy, the authorities did not purchase the ewes to distribute, they were already sorry for heir unwise economy.

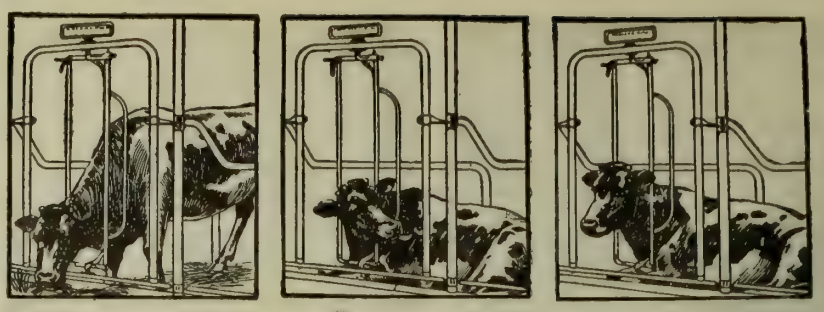
Speaking of the supplies of sheep in this country, Colonel McEwen said that in Montreal in one week recently 5,000 lambs had been sold to the United States, which was rather remarkable. In Australasia the great drought had reduced the supply of mutton seriously.

"In addition to all trade requirements," said Colonel McEwen, "the supply of wool for the Empire's forces is so great that there is not on the globe today, not in existence, enough sheep to maintain it. This should convince any one of the opportunities. I believe this opportunity facing the sheep industry is not equalled in any other line of agriculture."

CARE OF SOW AT FARROWING TIME

Farrowing time is one of the most important times of the year for the breeder of swine. Often a man destroys his chances of success by neglect at this time. While the number of pigs a sow farrows is important, the number she raises determines whether she is being kept at a profit or loss. A sow that farrows five pigs and raises all of them is more profitable than one which farrows fifteen and raises only two or three. The disposition of the sow has much to do with the number of pigs she will raise, but proper care at farrowing time is also an important factor.

A week or so before she is due to farrow, the sow should be removed from the other sows and placed in the quarters where she is to farrow. It is best to feed her a ration high in protein and rather laxative in its nature, similar to the feed she is to receive while suckling her pigs. tAt the Mis-



More Beef More Milk More Butter More Money

There are certain essentials in the care of stock that the up-to-date dairyman will not overlook. Stock must be comfortable, contented, and kept in sanitary surroundings to have them do their best. Positive increases in production are invariably noted where plenty of water, sanitary stable fittings, silage, ground grain feed, etc., are supplied.

Windmills. You cannot keep cattle plentifully watered by the old hand pump process, and if you try, you are sure to tire out before they have enough. WINDMILLS furnish the cheapest POWER and, with a wood or steel tank as a reservoir, will keep your cattle abundantly supplied in all weathers and enable you to care for a larger number. The TORONTO Windmills run easily in light airs, and are regulated for high winds. Quality of material and exclusive principles of construction make TORONTO Windmills decidedly superior. Prices on application.

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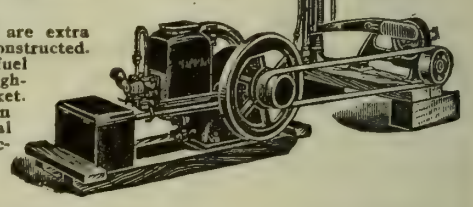
Pumps. We make every variety of pump for domestic, outdoor and indoor use. For Water Systems, we recommend our popular Fig. 19, or our No. 648 Pump, a combination hand and power pump, with air chamber for ramming water to elevated tank or for hose pressure. This pump will also work by electric motor, with TORONTO Jr., 1¼ h.p. Gasoline Engine, or with 2 h.p. Chapman Engine. Write for our Folder on Water Service, and state whether you wish to use Windmill, Gasoline Engine or Electric Power.

Write for Booklet on Water Systems

Engines. Chapman Engines are extra strong and heavily constructed. They generate great power on light fuel consumption. The Chapman is the highest type engine of its kind on the market. Our TORONTO Engine, slightly lighter in build, is a very capable and economical engine at a lower price. Get full particulars.



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We are open to buy any quantity of Washed and Unwashed Wool, paying the highest Market Cash Prices.

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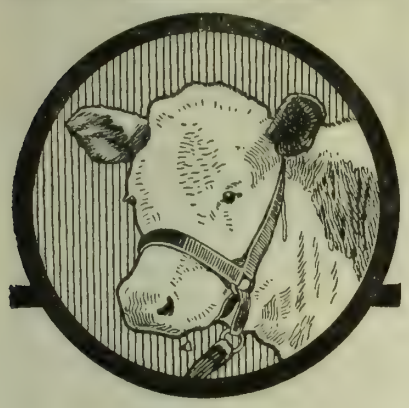

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From its initial run, the "Ocean" won popular favor, has retained its friends, and is always making more. It will be welcome news to thousands of travellers that the "Ocean" is to be restored to its regular run on its regular schedule May 14th, from Montreal at 7.25 P.M. and daily except Saturday thereafter, arriving at Halifax 10.45 P.M. the following day; May 15th, from Halifax at 8.00 A.M., and daily except Sunday thereafter, arriving Montreal 8.05 A.M. the following day.

The timetable is so arranged as to permit daylight views or some of the most picturesque parts of Caanad—the Wentworth Valley, La Baie de Chaleur, the Matapedia Valley. And when you travel on the Ocean you travel on one of the best trains in America.

Advertise in The Maritime Farmer and get Results.

souri Agricultural Experimental Station good results have followed the use of a ration of corn, 50 per cent; shorts, 25 per cent; bran, 15 per cent; and linseed oil meal, 10 per cent—all by weight. As the farrowing date comes closer, the ration should be reduced somewhat. This will bring the sow up to farrowing time in good condition. She will not be so feverish and restless, so there will be less danger of her mashing her pigs when she farrows.

An important precaution to be obsevred in caring for the farrowing sow is not to supply her with too much bedding; a bushel of wheat chaff or cut straw is good. If the place where the sow is to farrow is warm, it will not be needed for warmth. The danger of supplying too much bedding is that the pigs will be covered by it and be smothered or crushed.

The less a sow is disturbed at farrowing time the better, and for that reason she should be kept separate from the other hogs. While some one should be on hand, unless she needs assistance it is best to keep away from her. If necessary to help her, do it as quietly as possible.

The pigs should not be chilled before they have dried off and suckled, so if the weather is cold a lantern hung in the top of the cot will be of service. If the sow is gentle, it is well to take each pig away from her as soon as it is farrowed, and place it in a box or barrel containing some hot bricks covered with old sacks. After the pigs have dried off and are lively enough, they may be put with the sow. In case the pigs do become chilled, the best way to revive them is to dip them in hot water.

As the pigs are not able to take much milk, the flow should not be stimulated for a few days. Give the sow plenty of water, as she is in a feverish condition, but take the chill off of it if the day is cold. It is not necessary to feed the sow for a day or two, and the first feed given should consist of a small amount of thin slop, which should be gradually increased as the pigs become able to take more milk. In two weeks' time she should be on full feed, which should consist of a good laxative, milk-producing feed. There is no better way of feeding the pigs than through the mother, so feed the sow for the greatest amount of milk.

HOGS GOT PARALYSIS? FEED BONE-BUILDING FOOD

"Paralysis of the posterior part of the body appears to be a rather common condition in growing hogs, and sometimes even in mature animals," declares I. E. Newsom, of the Colorado Agricultural College, at Fort Collins. "While in some instances it may be due to mechanical causes, such as injury to the back, yet these cannot explain the greater number of cases. Some have suggested that intestinal parasites bear a causal relation, but this is open to considerable question as it is difficult to see just how worms in the intestine could produce paralysis.

"The theory that seems most plausible is that the bones, particularly of the spinal column, become softened, thus producing pressure on the spinal cord. The softening of the bones is probably due in many instances to lack of lime salts in the food, and is not infrequently noted when the victims have been heavily fed on corn. Consequently a rational treatment consists in the addition of lime water to the feed and an entire change of diet, especially with a view to building better bone. That this treatment will have any beneficial effect on the affected animals is open to question, but such measures when instituted should prevent other animals coming down with the disease."

THREE VITAL QUESTIONS

Are you full of energy, vital force, and general good health? Do you know that good digestion is the foundation of good health; Pains and oppression in stomach and chest after eating, with constipation, headache dizziness, are sure signs of Indigestion. Mother Seigel's Syrup, the great herbal remedy and tonic, will cure you.

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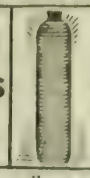

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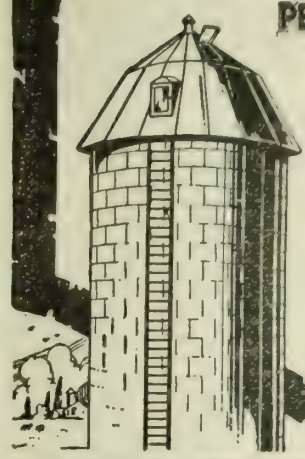

keep silage fresh and tender as June pasture grasses right to the last forkful. Absolutely rain-tight and lightning-proof. Cannot rust or decay. Made in hip or single pitch style. Shipped complete in sections that lock together tight and snug. A healthier herd is only one result of Pedlarizing your Silo with a Pedlar Silo Cover. Write now for Booklet M P

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THE HORSE

STARTING THE STALLION ON HIS SEASON

A correspondent invites us to offer a few hints as to the most profitable methods to be employed in getting a stallion started on his season, the information being vouchsafed that the intention is to travel the horse four days a week, keep him in town Friday and Saturday, home on Sunday, and then hit the gravel again Monday morning bright and early.

On this basis, the two first things to be done are to get the horse himself into as nearly proper trim as possible and then advertise the route he is to take—this route having apparently been settled during the winter as per agreement between the owner and sundry prospective customers. Let us suppose that the season is to open May 1, which is a Saturday, that day would find the stallion at the appointed stable in town. He would then be taken home that night and be ready for a proper start on the pike Monday morning.

As to the present care of the stallion, that will depend on the manner in which he has been kept during the winter, and of this we are not informed. It is presumable, however, that the horse has not been worked and is at present being fed an unwonted amount of grain in order to build him up in condition before the opening of the season. That, of course, is necessary, but at the same time he should have plenty of exercise. The run of a paddock or yard will not do. Though a horse raging around a small yard may seem to take a lot of exercise, he really does not. He should be hitched up and driven daily, the distance being increased until he is getting from eight to ten or twelve miles a day. A better way is to put him right into the team harness and make him do a share of the lighter farm work, according to his capacity to begin with, for then he can be made useful and the time of a man is not taken up half a day to give him his work. If put to harrowing now a stallion can be driven half a day in a team, which can be gradually increased until at the end of a week he is working eight or ten hours, the man driving him being the only one competent to judge of the amount of labor that should be demanded of him.

Anyway, it is no bad thing to work the horse until he is a bit weary, of course, well within his capacity. The functions of his body will then soon get into smooth working order and the processes of elimination and repair up to concert pitch. Anyway, however he gets it, the horse must have abundant exercise and rations to correspond. And it must be real exercise. Walking a horse in hand is the most tiresome chore imaginable, and few grooms there are conscientious enough to trudge eight or ten miles along the highway for the sake of doing their duty by the horse. So why waste the time of a man, when wages are so high? Why not make the horse's labor count in the work of the farm instead of putting in that same amount of time gadding along the road?

Oats is the best feed for the stallion during his season, but if he has been getting corn or some other food, never attempt to change it suddenly. Better keep on feeding corn than change suddenly to oats. Begin by substituting a small portion of oats for some of the corn and so gradually effect the change. This presupposing that the horse is healthy and is receiving proper grooming. If he is not healthy, call a veterinarian and let him take the case in charge. At all costs prevent the horse abusing himself. Pay particular attention to this feature. Thorough grooming is almost as essential as work and good food. By the combination of careful attention, a judicious amount of work, and plenty of sound, clean food, with not more hay than one pound per day for each hundredweight the horse weighs, he should get into decent shape in two or three weeks, and if vigilance be not relaxed should stay that way indefinitely.

Next, having arranged the route, and of course having complied with the law in the matter of obtaining a license and posting the required notices, proceed to advertise the horse's season. Interview the editors of the weekly papers circulating most extensively in the region in which the horse will stand. Contract for a reasonable amount of advertising space, and therein announce his services for the season, giving the horse's breeding and such other particulars as will likely attract the attention of mare woners. Publish in this advertisement the route the horse will follow, and then make the groom keep to his schedule religiously, so that those who wish to breed mares may never be disappointed. There is little more exasperating than to drive a mare several miles to meet a stallion and then discover that he is not there and won't be perhaps that day. By having the horse always on hand as advertised the owner will make friends and increase receipts.

If the stallion has any record as a prize winner, or if he has sired any such winners, get the editor to make some news mention of the facts. The more publicity that can be had through the local weekly papers the better will be the results. The writer speaks from personal experience in this regard. Then to fill the bill for those who do not read the papers, have some attractive posters struck off and post them up, always complying with the law in such cases made and provided, in such places where men do congregate, at cross roads, and other advantageous locations. Better have these posters printed on cloth-backed cardboard, so that when tacked in place they will not be whisked off by the first passing breeze. Likewise, have a few cards printed, giving the name of the horse, his pedigree in brief, terms, and the route to be followed. A supply of these should always be carried by the

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Have worn axles made the wheels all out of gear? You could have prevented that condition—and you can still help it with

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The mica does it. It fills the worn pores of the axle. Won't gum. Kills friction.

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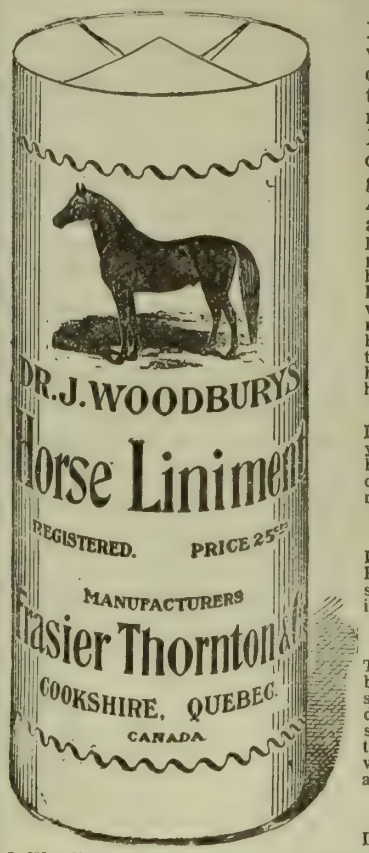

For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.
Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

Truro, N, S.
This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
Newton Lee, Owner "All Right" 5817.

Elmsdale, N. S.
Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.
Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.
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FRASIER THORNTON, &, CO., Limited, Manufacturers: Cookshire, Quebec, Canada.

Just Suits My Needs Building Up the System

This is the Way Thousands of Women are Speaking of Dr. Chase's Nerve Food

"I want to state that I have never taken anything to do me so much good as Dr. Chase's Nerve Food," writes Mrs. Edson Brock, Trenholmville, Que., and I am never without it in the house. I was so nervous I could not sleep, but now I sleep soundly at nights and wake up feeling refreshed and ready for the day's work. I used the Nerve Food for months and found that it just suits my needs and has built up the system wonderfully. I know it is Dr. Chase's Nerve Food that has brought about the great change in my condition and am thankful for it.

"My husband was a great sufferer from itching piles and has been entirely cured by Dr. Chase's Ointment."

We are constantly receiving letters like this in regard to Dr. Chase's Nerve Food. Everywhere it is being used because of its great restorative and reconstructive influence on the nervous system. Men and women who are run down in health, tired, nervous and discouraged, find in this great Food Cure the means of nourishing the exhausted system back to health and vigor.

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Instead of affording mere temporary relief by stimulating the nerves, Dr. Chase's Nerve Food builds up the system by supplying the ingredients from which Nature forms new rich blood and revitalizes the wasted nervous system. Put Dr. Chase's Nerve Food to the test when you are feeling tired out and discouraged, fill the body with new rich blood and new nerve force and you will realize again the joy of good health. 50 cents a box, 6 for $2.50, all dealers, or Edmanson, Bates & Co., Limited, Toronto.

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Could Hardly Breathe.

BRONCHITIS

Was The Cause; The Cure Was

DR. WOOD'S Norway Pine Syrup.

Mrs. Garnet Burns, North Augusta, Ont., writes: "I caught a dreadful cold, going to town, and about a week after I became all choked up, and could hardly breathe, and could scarcely sleep at night for coughing. I went to the doctor, and he told me that I was getting bronchitis. My husband went to the druggists, and asked them if they had a cough medicine of any kind that they could recommend. The druggist brought out a bottle of Dr. Wood's Norway Pine Syrup. I started using it, and it completely cured me of my cold. I cannot tell you how thankful I was to get rid of that awful nasty cold. I shall always keep a bottle of Dr. Wood's Norway Pine Syrup on hand, and I shall only be too glad to recommend it to all others."

Dr. Wood's Norway Pine Syrup is a remedy that has been on the market for the past twenty-five years, and we can recommend it, without a doubt, as being the best cure for coughs and colds that you can possibly procure.

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groom in charge, likewise by the owner, to be handed out whenever favoring opportunity presents itself.

With preparations thus made—that is, with the horse in decent physical shape and his services properly advertised as suggested or in any other feasible manner present him for public inspection in the town where he is to stand, and keep him there two or three days before the opening of the season. Though a great many people may not gather in town on Thursday or Friday, the townspeople interested will be glad of the chance to have something fresh to talk about; arrangements for advantageous boosting later may then be made, while trade may be drummed among such visitors as come in for supplies, repairs to machinery, mail, or the like. A few days immediately before the advertised opening of the season may thus be profitably spent.

From the start, be definite as to the terms on which mares are to be bred, and so facilitate collections later on. The stallion business is too often conducted on a slipshod basis, entailing a most unnecessary percentage of bad or at least doubtful debts, but on this matter of stallion fees and their collection more will be said next week. And just by way of a hint, if any of the physicians or veterinarians in the town owns a microscope of the necessary power, have an examination made of the spermatic fluid of the horse, as much for your own information and satisfaction as anything else. It will be pleasing to know that the spermatozoa are lively and in sufficient volume, and at least protective if they are not.—J. H. S. Johnstone, in Live Stock World.

BROOD MARES MAY BE WORKED

Pregnant mares can be worked advantageously right up to foaling time. Work should not be too heavy, but ordinary farm work will not hurt them. Successful colt raisers nearly always work their mares, and seldom have trouble with either mare or colt.

If you have no work, turn them out in a field every nice day. Always be very quiet and gentle with a mare in foal. In bad weather she is better off in the stable.

Fancy feeding is not necessary. Feeding and watering should be quite regular. A horse fed regularly and fully will seldom eat too much. The best hay for brood mares is mixed clover and timothy. Avoid all damaged feed. Some wheat bran and oats may be fed, even though the cost is high. Cut down on corn as foaling time approaches.

After the colt is foaled the mare should not be worked for about ten days, and then lightly for a couple of weeks. Care should be taken not to overwork or overheat her, as this will cause the milk to be bad and may cause colic or indigestion in the colt. It is best to leave the colt in the barn while its mother is at work.—William F. Purdue, Madison Co., N. Y.

THE USE OF SWEAT PADS

Replying to questions with respect to the use of sweat pads, I may say that it is necessary to view them from several different angles. There is no gainsaying the fact that the horse which is kept at work regularly, and remains in about the same flesh, works best and looks best in a properly fitted, well-made leather collar. On the other hand, when horses vary considerably in condition during different seasons of the year it is necessary either to carry a larger stock of collars than most of us care for or to use sweat pads. Furthermore, by cutting them up and using them in different thicknesses pads may be used to protect galled parts. For this last purpose a strong breast collar or humane collar is frequently satisfactory. "Sweats," even though they are hard to keep clean, are quite necessary at times. It is well to buy a good quality of pad.

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Set the tines of the fork deep into the load. It will lift an immense bundle and deliver it in the mow in even flakes, not tangled up as is the case when other forks are used. Handles clover, alfalfa, loose grain or straw, as clean as timothy.

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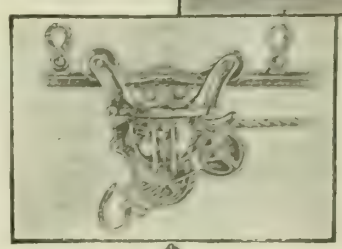

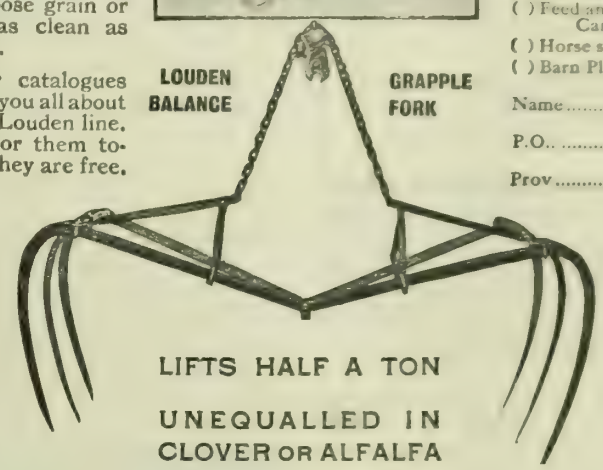

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We do NOT claim that they will stand up to this for 12 months, but we are prepared to prove conclusively that they are doing it NOW.

30 Eggs per Day from 36 Birds

is a record good enough to be going on with and should give you an idea of where to get your stock if you want birds that will turn you in some money.

Our stock, our records, and our method of feeding are open for the inspection of anyone interested.

We finish breeding this month. No eggs for sale after 31st May.

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POULTRY

LESSENING DEATHS AMONG THE YOUNG CHICKS

Every chick that dies increases the cost of raising the flock. If the little fellows are purchased as 'day olds," this is more particularly true than when the hatching is done at home; yet in any case the mortality is costly. The critical period stretches over the first two or three weeks of the chick's life. After that some may die or occasionally an epidemic will break out in the flock and take off a considerable number. The danger is much less, however, after the first three weeks are passed safely.

Overfeeding and feeding when too young are the causes of many deaths, also improper foods often prove fatal. Young chicks should have no food for 36 or even 48 hours after hatching. Corn bread, rolled oats, and hard-boiled eggs are good feeds for the first few days. Cracked wheat and fine cracked corn may be fed when the chicks are a week old. Amoid moist mashes. These cause all sorts of digestive troubles. Feed sparingly at first. Do not throw down a lot of food to become foul and unfit for use.

Cleanliness is essential in raising chickens. See that all the houses and coops are thoroughly disinfected before the chicks are placed in them. Keep the brooders clean. Spray or wash them with a coal tar preparation. This is the most effective way of destroying germs and vermin. White diarrhea, the deadliest enemy of young chicks, is spread by foul quarters, and unclean drinking fountains and feeding troughs. Pure water is very ecessary.

Vigorous breeding stock is the first essential for healthy chicks, but sometimes when a good start is made neglect and improper care work havoc. In large flocks, one or two having the white diarrhea may cause a considerable percentage of mortality. This disease is often spread a good deal during the first day or two of the life of the young chicks. In incubators where the chicks drop down into the light as soon as hatched they pick up droppings, and one with the disease may contaminate a large part of the flock. Chicks hatched with hens are freer from the disease because the little birds remain under the mother hen until they are fed, and hence do not have a chance to pick up neglected droppings. For this reason it is well to keep the incubator dark until the birds are removed to the brooders.

Warm, dry quarters are necessary at first. Sunlight is also a great help in building up the strength of the little fellows. Give only a limited range at first, and especially if hen mothers are allowed with the chicks. Free range is never advisable for chicks until they are at least a month or six weeks old.

If chicks are kept in clean quarters there should be little danger of lice. Look over the little fellows, however, and put a bit of lard on the head and under each wing of the whole bunch. This will effectively deal with the body lice, if the old hen is also treated. Should red mites appear in the coops, nothing but a thorough cleansing and spraying will deal with them.—C. H. Chesley.

WEIGHT VS. COUNT METHOD

The theory that eggs should sell by weight rather than by count does not appear to be gaining ground. Apparently the theory is not being pressed very hard. It istrue the thrifty housewife in the city often complains she must pay the same for small eggs as for large eggs, which by itself is a very proper criitcism. Poultrymen who raise the breeds which produce large and heavy eggs sometimes object to the present method of selling, believing they do not get the full value for their larger and heavier product. On the other hand, the poultry trade folks see no reason for a change to weight system of buying and selling. Some poultry authorities confess ignorance as to what should or should not be done.

The housewife's point seems well taken, and there is little objection to the large poultryman's point of view. No one will gainsay that if a poultryman produces a better product he should receive a better price. If the weight is chosen as a selling basis, there must be a "standard" egg. Standards have been arbitrarily set regarding quality of the eggs, and a fresh egg on the market must meet the standard of the market where it is sold. Here's where the trade folks come in. Weight cannot be used as a basis without just as strict a line in regard to quality as at present. But the trade folks who have expressed themselves to a representative believe weight is now considered and allowance made in the price. It is certain that large eggs of a certain quality do bring, in general, more consideration than small eggs. It is equally true that storage folks will seldom take a 30-dozen case of eggs of storage that does not weigh 56 pounds.

Another little point in this connection has interest: A large rotten egg weighs about the same as a small fresh egg. From all this it would appear that to put the theory in practice, either weight or quality must be used as a basis, modified by the other, if the count remains 12 eggs to the dozen. Approaching from a different angle, a standard might be made whereby 24, 26, or 28 ounces constituted a dozen. The count in this case might be 11, or it might be 13 eggs

Again, according to Prof. C. T. Patterson, of the Missouri Station, there was a difference in weight of eggs laid in the Missouri egg laying contests of from 2.03 ounces to the egg to 2.29 ounces. The hens averaged in weight from 3.12 pounds to 6.36 pounds. The difference in egg weight is approximately 13 per cent. This is a good per cent of difference, but is the actual weight difference enough to be considered large?

In the winter season an egg often costs the city housewife 5 cents, and if it is a little egg weighing 2.03 ounces the egg costs the consumer at the rate of approximately 40 cents a pound. If an egg weighing 2.03 ounces is worth 5 cents, the 2.29 ounce egg at the same rate would be worth 5.1 cents; the difference in egg value per dozen between the two weighs would be 1.2 cents.

The producer sells at a lower price than the consumer buys, and through the months when eggs are plenty at still lower figures. His difference in selling by weight, then, is smaller. If the theory was put into practice who knows but what the present market price would be manipulated as the standard for the heavy eggs, and the light-weight producer lose, rather than the heavyegg producer gain?

THE CARE OF EGGS

The loss of eggs during the early spring and summer months is estimated at from 5 to 25 per cent of the total production. The causes of this enormous waste are briefly two: (1) Persons who have only small flocks do not realize the necessity of gathering the eggs daily and the keeping of the collected eggs in a cool, clean place until marketing; (2) the dealers do not provide proper places in which to keep the eggs from the time they are received until they are sold to the consumer, or packed in cases and shipped to the wholesaler in the city.

The writer is of the opinion that the blame for this loss is not always the farmer's, but a good share rightly belongs to the merchants and dealers who place their eggs in store windows and allow the sun to shine on them until the lot is sold. Incubation will start in an egg at a temperature of 70 degrees, and often the temperature inside a store show window will be very near 100 degrees. Eggs kept in such a window for only a few hours will become unfit for food, and if sold over the counter the customer will complain of the quality, and dissatisfaction will result all round.

The Poultry Department of the Agricultural College is endeavoring to appeal to all dealers this spring to provide proper boxes in a cool, clean place in which to store eggs until they are sold, and use neat printed display cards in the window of the store to attract attention. The exhibiting of eggs in the store windows is both an injury to the trade and a loss to both consumer and dealer. The

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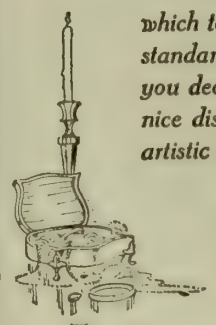

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"It can be used anywhere in the home for touching up or renewing worn out or shabby surfaces.

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very perishable nature of this important food product is a sufficient reason for all persons handling them to use every precaution possible to supply only eggs of fresh quality. Your personal support and co-operation is asked to bring about very much needed improvement in this trade.—J. P. Landry.

THE NEST BOXES

A matter requiring careful attention, but which is frequently overlooked, is the nest boxes. These are best made of bottomless boxes, about fifteen inches square and eighteen inches high, standing upon a shelf a few inches above the ground. Fixed nest boxes should never be employed, as they are so difficult to clean, and if the greatest care is not exercised will harbor vermin and the like. They should be a few inches from the ground, because when on the floor there is a danger of the hens eating or the rats removing the eggs. There should always be a sufficient number, as when too few are supplied the hens lay about the house, and in this way the vice of egg eating is encouraged. The nest boxes should be placed in the darkest part of the house, preferably below the window, as the less the birds are disturbed while laying the better. More than this, if facing the door or the window, it would mean that during hot weather the sun would shine directly on the eggs, possibly starting the germ into activity, at any rate doing the eggs no good. Straw is the best material with which to litter out the nests, and oat straw is better than either wheat or barley, being more pliable. Hay is not so suitable as straw, as it is a retainer of heat, and becomes foul sooner than the latter.

LICE AND MITES

Bulletin No. 86, of the Storrs Agricultural Experiment Station, on the subject "Some Lice and Mites of the Hen," by Lawson and Manter, places emphasis on the following points:

1. That there is much confusion regarding the relative harmful effects of the lice and mites, owing to the fact that the lice are more easily seen, with the result that they are often accused of causing injury actually done by the mites.

2. That the lice can be easily controlled by the use of blue ointment rubbed on the hen.

That carbolenium or one of the coal tar products will kill or repel the mites if applied once a year by the right method to the roosts.

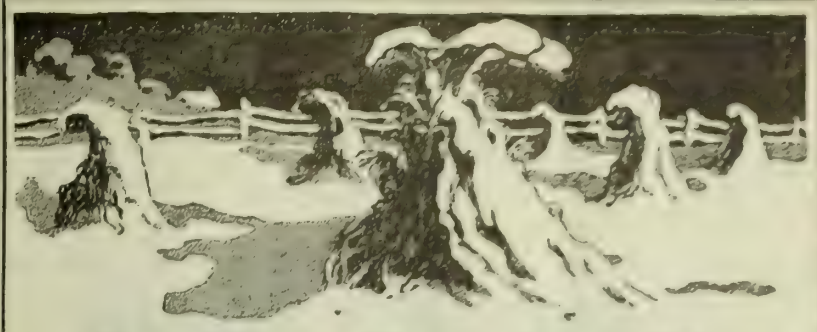
4. That caraway oil proves the best control measure for the scaly leg mite.

This bulletin is the product of much experimental work, covering considerable length of time, with studies of these pests on a large number of hens and chickens, both out of doors and by close observation in the laboratory. Several facts regarding the life histories of these parasites are new to science.

POULTRY HINTS

So many foolish people think that successful poultry raising is just the industry for semi-invalids, but experience teaches us that to be successful it takes plenty of muscle and energy to make it pay.

Cramp is a disease caused by cold and dampness. The toes become curled up and the bird walks on its knuckles or the knee joints. Bathe the feet in hot vinegar and water, and keep the bird warm and dry until it is again able to walk as usual.



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This silo assures you of well-preserved silage, the only kind that has any value. You cannot expect good silage from a "cheap" make-shift silo. You cannot make or save money by buying such a silo, no matter how low its cost. Low price is not what makes a silo a good investment. It is the quality of the silage you get out of a silo and the number of years that it will last that determine its value.

Every feature of the Ideal is the result of long experience in silo manufacture. Every detail in the selecting of the material, and the manufacture and fitting of the parts is clearly explained and illustrated in our large silo catalogue. There is nothing obscure or indefinite about the superiority of the Ideal.

Ask for a copy of the catalogue and read it. You will see just what kind of material is used; how the staves are milled, splined and made to fit perfectly; how the wood is treated with a preservative that protects it from the moisture and acid in the silage; how the entire silo is put together to withstand for many years the tremendous pressure of the silage.

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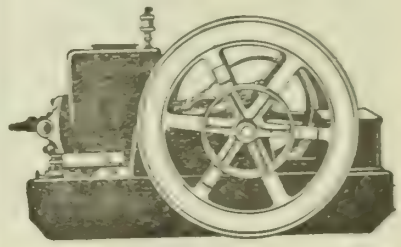

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

One of Life's Lessons

By Eben E. Rexford

Martha, at work over the hot stove, on one of the sultriest of summer rays, felt cross and out of sorts with everything and everybody. Baby Dolly was very fretful because of the heat, and kept asking for a drink every time her mother had her hands in some kind of work that made it impossible for her to comply with the petulant request on the instant. Failure to respond promptly to the little one's demands was sure to result in a wail of indignant protest that jarred on the tired woman's nerves until she cringed as if someone had struck her a blow. Her work was continually going wrong. The berries she was "putting up" had been on the verge of scorching several times. One or two jars had burst after she had filled them with fruit, and their contents had run all over the table and made a great puddle of sticky sweetness on the clean floor before she could get control of it, and in the attempt to save a portion of it from becoming a total loss she had burned her hand. And the baby, a little later, had taken advantage of her absence from the kitchen for a moment, to creep into the puddle of berry juice and make a fright of herself by daubing it all over her dress, which had been fresh and clean when put on after dinner.

"Dear me! I feel as if I'd scream at what happens next," thought the nerve tortured woman. "You naughty girl! What possessed you to get into that puddle and make your dress look as if it hadn't seen the washtub for a month? Now I'll have to wash you from head to foot, and put a clean dress on you, and while I'm doing it the berries'll have to wait, and when I get round to them again a good deal of the work'll have to be done over. You deserve a good whipping. I've a good mind to give you one!"

"I wouldn't whip her if I was you, Marthy," said a quavering old voice at the door. "She didn't mean anything wrong. She's too young to sense things. Le' me take her out in the yard where it's cooler, an' mebby I c'n get her to sleep."

"Don't come round here meddling," cried Martha, hotly. "I guess I can get along without your advice. I'll try to, anyway. Dolly deserves a whipping. She's old enough to know what it means, and I might as well begin now as any time."

The Angry Word

"Oh, Marthy, don't strike her!" pleaded the old man in the doorway. "You'll be sorry if you do. You're all out o' patience now. Wait till you kind o' cool down, an' think it over. W'y, Marthy, I'd a good 'eal ruther you struck me! 'Twouldn't hurt me so much as it would to have you poush her—poor little thing!"

"I wish you'd get out of my sight and keep out of it!" cried the angry woman. "Don't you dare to talk to me in that way, Silas Budd! We've humored you and put up with you because you're an old man, and we felt sorry for you, till you act as if you thought you was boss here. I've got sick and tired of it. I won't put up with it any longer."

"I didn't mean to say anything to make you mad, Marthy," said the poor old man, humbly. "On'y it didn't seem jest right for you to punish that poor little creetur when you was so—so put out with things. We do things we don't mean to when our temper's got the upper han's of us, an' we're sorry for it afterwards, but that don't help matters. Come, Dolly, le's you an' Uncle Silas go an' swing in the yard, an' hear the birdies a-singin' in the trees."

"She isn't going one step with you," said Martha, in a tone as hard as flint. "You make me out of all manner of patience with you, Silas Budd. You humor the child so I can't do anything with her. She think she's got to have someone paying attention to her all the time. I've got work to do. I can't waste my time on her. Keep still"—this to the child, who was reaching out her hand to the old man, and trying to wriggle out of her mother's arms. "Keep still, I say, or mamma'll whip you!"

"Oh, do let her come," pleaded the old man. "I'll take care of her so you can go on with your work an' not be bothered the least bit, Marthy. She wants to come. I reckon I c'n get along better with her than you can, Marthy."

His words angered the woman beyond the point of endurance. She was in that highly wrought-up condition that makes a man or woman for the time being an unreasoning creature. Usually she was glad to have the old man take care of the child, for he was always to be trusted, and no mother could be kinder than he was. But now she felt jealous of his influence over her little one.

"Silas Budd," she cried, not stopping to think what she was saying, and not caring, "I wish you'd clear out! Seems to me it would rest me more than anything else I can think of to get rid of the very sight of you. You're always talking about going over to Cousin Oliver's—why don't you go? I wish you would, and that you'd stay there till I asked you to come back. I reckon you'd stay quite a spell before that happened."

"Marthy, do you mean that?" asked the old man.

"If I didn't, I wouldn't have said it," was the harsh reply.

"Well, I'll go, then," said the old man, with more spirit than she gave him credit for. "I won't stay where I ain't wanted. An' I shan't come back till I'm asked to, neither."

"Well, if you don't come back till I ask you to, you'll be a good deal older than you are now," was the cruel response.

"Mayn't I kiss the baby goodby?" the old man asked, with a quaver in his voice. "Don't seem's ef I c'd go 'thout doin' that."

"I've put my foot down on the whole business," said the woman, with a cruel delight in torturing the old man. "I've turned over a new leaf, and it isn't going to be turned back now. I guess you'll manage to live through it if you don't kiss her. Anyway, you'll have to." The truth was, Martha had no idea that he really meant to go away.

"By-by, Dolly," the old man said to the child, who stretched out her little arms to him, and exerted all her strength to break away from her mother's restraining arms, to get to him. "By-by, darlin'," and then tears came and made the poor old man blind to the eager face of the little one, as he turned and went away groping'y, like one walking in darkness.

Presently Martha saw him going down the lane, with a little bundle tied in a handkerchief.

"I declare, he really is going," she thought. "Well, I'm glad of it. I don't care if he stays always. He does vex me so!" She looked out once more, and saw the old man turn into the highway, at the end of the lane, and the thought came to her that she had never seen him stoop so much or walk quite so feebly. It was as if he had grown old all of a sudden. At the end of the lane he turned and looked back to the house. Dolly saw him, and stretched out her arms with a cry that had a call in it. He heard, and waved his hands to the child, and then turned suddenly and walked out of sight, as if he could not trust himself to look that way again.

Martha had reason to think of Uncle Silas more than once that afternoon. The woodbox that he was in the habit of keeping filled was empty, and she had to replenish it at the cost of many extra steps. It seemed as if she had never used half so much water before. When Uncle Silas saw to keeping the pails filled she had not realized how much was necessary to her daily needs. Dolly woke from her afternoon nap, cross and fretful, and she had to spend a good deal of time with her. If Uncle Silas had been there—with the new leaf unturned—he would have relieved her wholly of the little one's care. She was so constantly reminded of Uncle Silas's customary helpfulness by the lack of it this afternoon, that she began to realize how little she had appreciated his services.

When her husband came home at night, he missed the kind and gentle old face at once. Martha told him that Uncle Silas had at last put into execution his often-spoken-of plan of visiting Cousin Oliver's folks. She did not think it advisable to explain how he came to take so sudden a start, for she knew her husband would blame her in the matter. The truth was, she began to blame herself. She was ashamed of having let her temper lead her into saying harsh and unkind things to the old man, for she knew they had been undeserved.

"He'll be back in a day or two," she told herself. "I'm sorry I said what I did to him. It'll be a good lesson to me. I'll try to keep my patience better in future."

But the days went by, and Uncle Silas did not come. John, who missed the old man almost as much as the baby did, kept wondering why he stayed away so long. Little Dolly, every day, and many times a day, kept asking for the friend she loved so well and missed so much. She would creep across the floor to the empty old rocker which had been Uncle Silas's favorite seat, and pull herself up by it, and lay her head down on the cushion and cry, and refuse to be comforted. The sight of the little one's grief smote the mother's heart keenly. More and more she blamed herself. More and more her heart was stirred with pity for the poor old man whom her bitter words had driven away from the only place he could call home.

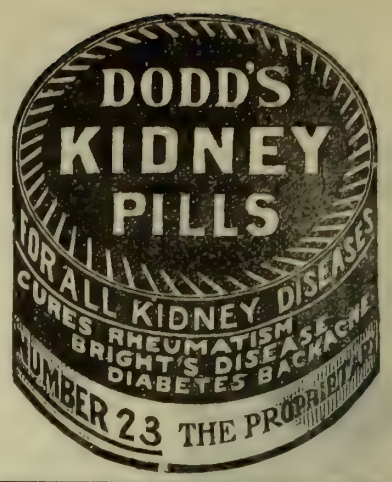
Home Again

"If Uncle Silas doesn't come back by Saturday, or send some word, I'm going over to find out what keeps him," John said one day. "I want to see him so much that I feel as if I were homesick. I didn't know how much I cared for him before. The palce seems as dull without him as spring would be without the blackbirds."

Saturday came, and Uncle Silas had not returned. Sunday afternoon John "hitched up" and drove over to Cousin Oliver's.

"Tell Uncle Silas that Dolly wants him," said Martha, as he drove away. "And tell him that I want him, too. Don't forget to tell him that I said so."

Martha felt quite sure that if she sent that word to the old man he would say nothing about the cause of his going away. It hurt her New England pride—or stubbornness—somewhat to admit, even to herself, that she was sorry for what she had done. But she had, with that pride, the New



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Young women who are troubled with painful or irregular periods, backache, headache, dragging-down sensations, fainting spells or indigestion, should take Lydia E. Pinkham's Vegetable Compound. Thousands have been restored to health by this root and herb remedy.

If you know of any young woman who is sick and needs helpful advice, ask her to write to the Lydia E. Pinkham Medicine Co., Lynn, Mass. Only women will receive her letter, and it will be held in strictest confidence.

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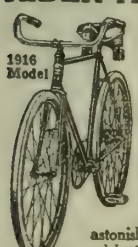

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England conscience which sometimes insists on punishing its owner for wrongdoing by self-humiliation which no one else knows anything about.

She felt sure that when John came home he would bring Uncle Silas. So she set about getting a supper that would be a sort of celebration of his home-coming. She made some of the tea biscuits he was so fond of, and baked a pan of gingerbread which he had often said "beat new-fangled cakes all holler," and then, as a finishing touch of welcome, she made a great bowlful of loblolly. This was Uncle Silas' favorite dish. It consisted of milk brought to a boil and thickened with a little flour, with a seasoning of cinnamon, after which a generous bit of butter was added, also a cupful of thick cream, and just enough sugar to give it a sweet taste. Uncle Silas had given her the recipe as he had written it down in memory, from childhood days, when his grandmother delighted in making good things to please the appetites of her grandchildren. Martha felt that he would appreciate the motive which prompted the preparation of this delicacy, and that he would accept it as an unspoken apology on her part. It would be a good deal easier to set herself right with him in that way than it would be to tell him, in so many words, that she was sorry for what she had said to him.

By and by John came, and sure enough, Uncle Silas was with him.

Martha grabbed up Dolly and ran down to the gate to meet them.

"Here's a girl that's glad to see you back, Uncle Silas," she said, holding out the child like an olive brnch of peace.

At sight of the child the old man's face lighted up as the sky does after a shower, all radiant with a welcome too sweet for words, as he took her in his arms and kissed her over and over again. All at once he hid his face in her flaxen hair, and Martha knew that he was crying. She turned hastily away and wiped her eyes on her apron, while Dolly, happy at last, put her chubby arms about the old man's neck and clung to him as if she never meant to let him get away from her again.

"I declare, it seems good to get home again," said Uncle Silas, as he dropped into his old rocking chair. "They was jest as kind as they c'd be to me, over to Cousin Oliver's, but somehow a home don't seem jest what it o't to be if there ain't any little folks in it," and he snuggled Dolly's dimpled face against his seamed and withered one, with a long sigh of content.

"It seems good to see you in your old place again," said Martha. And that was all that was ever said about the matter between them.

When John came in from the barn, and they sat down to the supper table, Uncle Silas's face was fairly radiant as Martha sat the bowl of loblolly beside his plate. "My! but that looks good," he said. "An' it tastes better'n it looks. I don't know whether it's all in the loblolly or the knowin' that you tho't of an old man's whim that makes it taste so good, Marthy. I wouldn't wonder if 'twas that that gives it such an extry flavor."

After supper Uncle Silas took his rocking chair out on the veranda and rocked Dolly to sleep. Martha smiled softly as she heard him singing the old hymn he loved so well:

"There is a land of pure delight
Where saints immortal reign.
Infinite day excludes the night,
And pleasures banish pain."

"Dear old soul, he's happy," she said. "And I guess I am, too. I've learned a lesson that I hope I'll never forget."

KEEPING RANGE CLEAN

I am sending my method of keeping my steel range clean, as it looks like new after using it for six years. Black-lead iron part as usual. Nickel and sheet iron to be washed with 1 qt. soft water, 1 teaspoon coal oil, stove to be just warm. Do small portion at a time and polish with dry flannel. Do not wait till it dries. Stove will keep clean if rubbed with dry cloth every day, using different cloths for nickel and iron. By taking care when frying meat to have lid on, stove will keep clean for a month.—Mrs. A. H. A.

BRUSH AND COMB CASE

A home-made brush and comb case is made from a good sized cigar box. Take off the top and carefully cut one-third of the box off lengthwise, through each end and along the bottom. Now nail these two pieces to the top part and insert a small eye to hang by. After washing off all ppper and slowly drying, stain or varnish, and you have a handy, handsome case with little labor and nice enough for any room. Same can be used for letters if so desired.—Miss E. A. L.

RACK FOR PIE TINS

A very useful holder or rack for a number of pie tins is made by two uprights short enough to go in between your pantry shelves. Now cut as many shelves as you want, each the width of the upright and a couple of inches longer than the diameter of your pie tin, and nail them between the uprights at intervals of two inches. As you take your pies from the over put each one on a shelf of your rack. Besides cooling much more quickly, they will take up much less space on your pantry shelf, and the rack can be moved to any shelf.—Miss E. A. L.

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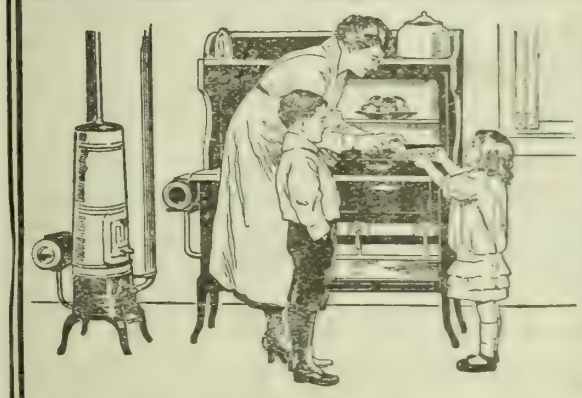

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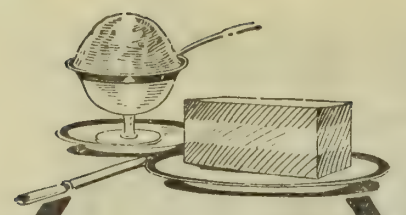

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HEADING OFF NEURASTHENIA

Practical and Authoritative Advice—By Dr. W. Peabody Bartlett

Unless you can control yourself, body and mind, you are on the fair way to neurasthenia, that most dreaded of nervous breakdowns. The person who cannot control himself is sick, using the term "sick" in its broadest sense. More people are harmed by the emotion they cannot control than by hard work, and it is easy to recognize the victims of uncontrolled emotions.

Worry and fear and the grosser appetites are the evils that overcome us, and they succeed only in inverse proportion to our enlightenment. They thrive at their best through ignorance of the facts of life, and they cannot withstand intelligent examination.

If you are perfectly well and normally intelligent, all the forces of these evils ought not to prevail against you. They who are really controlled by the body and abnormal mind, instead of themselves controlling, lack physical, mental, and moral strength—although the lack of moral strength is in itself frequently a form of illness.

Such people are easily annoyed, grieved and frightened. Trifling causes constantly set up the emotional reactions of fear, anger, etc., within them. The prevailing mood with such people is one of more or less disguised depression and "grouchiness." The brain becomes so sensitive to slight annoyances that what would ordinarily not be noticed by a normal individual, or noticed very slightly, excites disturbance and disorder of all the bodily functions.

These people become the slaves of their immediate surroundings. They worry and have apprehensions, selfish indulgence becomes a troat. Such people cannot be said to be well. Their condition is readily recognized by physicians as unnatural and diseased. They have no masterful control over their bodies and minds, such as strong men and women should have.

Self Control is Normal

Those who, to a very large extent, lose emotional control of themselves, become the patients whose fatigue is identified by medical men under various names. Thus we have the "neurasthenic," the "psychasthenic," the "hypochondriac," and other classifications. These are "fancy names" for nervousness, irritation, and melancholy. There is an "anxiety neurosis" now described, in which the most deplorable nervous fears prevail. The neurasthenic fears to cross an open space, or he dreads a crowd, and cannot control his fears. He is controlled by them. The psychasthenic pictures a cause for emotion which has no existence for the particular patient, but which, if real, would affect a normal mind. They are the victims of their own imaginations in a special sense. The hypochondriac thinks he has heart disease, or is threatened with apoplexy or insanity. And so it goes.

The normal person controls the intensity and duration of these emotional spells, because he or she knows the actual value of them. Certain books that we read, certain plays that we see, set up reactions of anger, grief, etc., yet mental equilibrium is quickly regained. But the nervous person puts himself into the place of one placed by author or playwright in some situation of horror, and suffers accordingly. It overshadows his life for an abnormally long time. The emotion becomes harmful because it lasts. There is no normal reaction.

The neurasthenic, or nervous person, will dwell upon some slightly unpleasant incident of his life, lie awake at night brooding over it, and build new fears upon it. In other words, the grave neurasthenic is likely to have increasingly worse symptoms. His ordinary fatigue may be mostly physical, and to only a slight extent mental at first, but later he becomes a mental and physical wreck solely because he cannot control his mind.

It is easily seen from the foregoing how important it is to keep control of one's self. The "neurasthenic" or mildly nervous person, is one who has lost that control in a small degree, the "psychasthenic" is one who has lost that control in a larger part, and the insane patient one who has lost is completely.

The immoral person is ignorant, one who understands neither his relations to the sensual brute of the past ages nor his obligations to our present day standard of manhood. In the midst of moral evoltuion he is morally, and, in a sense, physically sick—only he doesn't know it as the ordinary neurasthenic knows it. If he were well he would control his passions, such control being the sign of health. There is more reason why he should consult a physician than that the neurasthenic should. Society ought to be more concerned about this type or sick man than about hookworm.

Over-sensitive, emotional tendencies ought not to be encouraged. In other words, all controversies should be avoided. Morbid sensations and emotions must be resisted intelligently. The reason why the treatment of the conditions under discussion is so unsatisfactory is because the patient is handled upon a physical basis.

Too many physicians ignore the fact that emotions which the sufferer cannot control are at fault, and mistake the case for neurasthenia. There is a school of physicians which insists that these conditions in people are not due to inability to control mind, but rather to tuberculosis and other diseases. So they doctor them altogether physically, they bathe their patients or order them not to bathe, they rest them or work them, they are given stimulants like strychnine, or they are given sedatives. And so it goes.

Comments are not necessary here, for the fact remains that while some of these patients treated under this belief get well, it is only a bodily cure, and they soon relapse, because it was their minds which were faulty, and these minds were not cured. In this particular instance the word cured means that the people were not made to understand the real cause of their trouble, and were not helped to control their minds.

If you have neurasthenia you may be sure of one thing: you are intelligent. No dull-witted person ever suffered from that trouble. No person of a low grade of intelligence ever suffered from highly nervous disorders whch made it impossible for them to control their minds. And it is a sad sight to see these intelligent people becoming wrecks, mentally and physically, simply because they have not been taught that their trouble lies in their inability to control their minds. They should be taught that as soon as they begin the practice of controlling their minds they begin to recover. If they knew how, they would throttle those evils that make them so ill.

But those evils do not have to be throttled. Let the sufferers begin to think calmly and sanely, let a flash of enlightenment reach them as to the truth of what the trouble is, and the sufferers begin to control their minds.

To tell a person to use "will power," and to go no further in your advice, is like tossing a child in the water, telling him to swim, and then walking away. It is quite true that will power is necessary, but for the persons just described the exercise of will power outright is practically impossible.

The way to lead up to proficiency in using your will power is to start with some simple little training. As previously explained, the person who is ill through inability to control the mind becomes nervous, morbid, melancholy, angry, worried, or frightened, and whichever of these emotions may be

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uppermost, the cause has been the same—some little incident. It may be from reading, it may be from seeing a play, it may be from witnessing an accident, it may be from hearing gossip, or a hundred and one other causes whereupon the unfortunate begins to suffer.

When the neurasthenic is in this condition, he or she, being intelligent, knows right down in the heart that there is no necessity for "going to pieces." The instant you get into a tantrum or a melancholy spell, stop for a moment. Then commence to breathe regularly. Take out your watch and inhale during two seconds. Then exhale during two more seconds. Measure your breathing in this manner for five minutes or ten minutes. Then say to yourself that you have got control of your mind. The chances are this will be true, and you will laugh at the trivial little incident which a few moments before had so worked you up. This exercise is especially good for overcoming the jerky and gasping respiration resulting from fear and anger.

If you are frightened over some trivial incident, sit down and grin at yourself in a hand mirror for ten minutes. This may seem absurd, but it is not one fraction as absurd as allowing some silly little notion to get control of your mind and thus affect your body. If you have melancholy spells, go to your room and practice a few tango steps. Look at yourself in a mirror and see how clumsy you are. All of these things take your mind off the troubles that are bothering you, and they lead gradually to a time when, if any little events affects you, you can say to yourself: "It is trivial. I will forget it," and you do forget it.

When you are ready to do this you will have acquired will power. You go into the water repeatedly and thrash about until you finally learn to swim. You cannot learn with the first plunge—and so it is with your will power. If you have allowed your mind to control your body until you are a neurasthenic, or at least until your body and mind are slightly affected, you cannot exert your will power in the flash of a moment by means of a thought. You must practice just as you would practice at swimming. Practice at the little thin just described, and in time you will have gained complete control of your mind.

Dangerous Conditions

Probably two-thirds of the neurasthenics do not know that they are in this dangerous mental and physical condition. There is the story of the old maid who suddenly began weeping. There was apparently no cause for this, and when she was asked why she was shedding tears she said, between sobs, that she was thinking what a terrible thing it would be if she should ever get married and have some children, and they would be playing on the banks of the river and fall in and be drowned!

She was a neurasthenic.

I know a woman who lived in an aristocratic neighborhood in a large city. Her husband was out of town when he dropped dead, in a hotel, of heart disease. It fell to my lot to break the news to her, and, as gently as possibly, I told the woman how her husband had so suddenly died. I was all prepared to catch her as she fainted, but I did not have to do so. She looked at me, and said: "Chetney dead? Just fancy!"

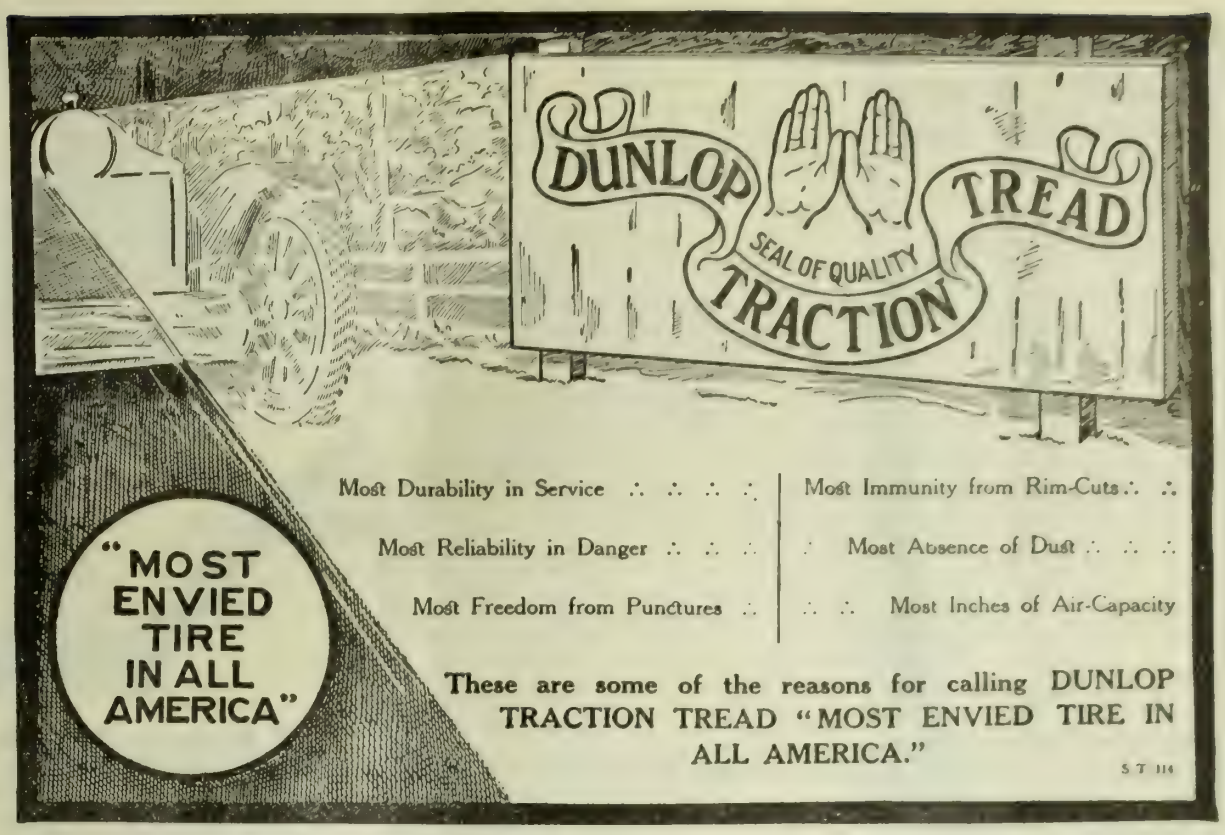
This woman could certainly control her mind. She was far from a neurasthenic. I know that she loved her husband, but she had lived all her life among people who prided themselves upon their ability to hide every emotion, and when the big crisis came, she—at least to my way of thinking—overdid it.

But if you are careful to coax yourself out of every little mental disturbance, just as the suffered from insomnia counts sleep jumping over a stone fence in order to get to sleep, it will not be long before you will be able to control your mind, and thus restore your emotional health. Your emotional health once restored, your physical health will take care of itself, and you will soon become normal.

Always remember never to let any emotion, whether it be grief or joy, anger or fear, melancholia or hysteria, get the better of you. In other words, do not let your mind control you. If it is too late for this advice, then go back to my other advice, and gradually win control over your mind. Once it is under control, "never lose your grip," and you will have safely driven away or head off neurasthenia.

FOR CANKER SORE MOUTH

Burn a corn cob and apply the ashes two or three times a day, or annoint with a piece of alum.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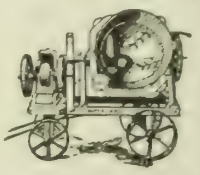
SALADS TAKE THE PLACE OF BITTERS IN THE SPRING

By Catharine C. Creamer

Salads have come to be so generally used, and made of such varied combinations of meats, vegetables, and fruits that the name ceases to suggest only the raw salad plants with sour dressing, or the "something to be eaten with salt," as the name implies.

The simplest salads are the oldest and best known, and consist of tender leaves, stalks or young tips of plants which may be well seasoned and eaten without cooking. The green vegetables used in this way do not contain very much real nutriment, for they are principally water, often as high as 90 per cent. They do contain some mineral salts, such as potash, lime, phosphorus, and iron, which are valuable additions to the diet, for they help to keep the blood in tone and to maintain a healthy condition of the whole body. Cooking such plants involves a great loss of this valuable mineral matter, while the fresh and attractive appearance of the green plants serves as an appetizer for the more substantial part of the meal with which the salad is served. Then, too, the large

Famous Little No. O Power Mixer



Turns out a batch of thoroughly mixed concrete in less than one minute. Discharges from either side, which other mixers do not do. Also mixes your lime and cement mortar to perfection. Light, durable, highly guaranteed, and has a big reputation. Adapted for a hundred different kinds of jobs. A great money saver. Write for our special offer.

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Paint is as necessary as fire insurance to the life of YOUR buildings; it IS your insurance against the ravages of time and weather. Every can of
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For bare walls use "Sanitone"—the new washable wall paint.
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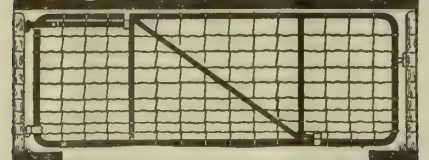

THERE is no guess work in the manufacture of Peerless gates. The points of greatest strain are scientifically calculated and then we design braces, stronger than actually necessary, to make our gates stiff and rigid—they simply

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They embody only the best materials. Frame-work of 1⅝ inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with No. 9 Open Hearth galvanized steel wire—built for strength and durability weather proof and stock proof.

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Winnipeg, Man. Hamilton, Ont.

amount of woody material or cellulose in these green plants acts as ballast or gives bulk to the food and thus aids a sluggish intestine. Hence a craving for these foods should be recognized as representing a real need of the body, and raw salad plants may be looked upon as a splendid substitute for the "spring bitters" in which the housewives of an earlier day placed so much confidence. Especially in the early spring days, when the diet of winter vegetables and meats has grown monotonous, is the refreshing green vegetable salad most appreciated. Although these plants may be purchased the year round on market in the cities, their use out of season makes them a luxury, except at this time of year, when their real value to the body justifies their place in the diet.

Lettuce, cabbabe, and celery are the most common salad plants, and may be easily prepared. The greatest care is needed in cleaning these foods, which are to be eaten raw. Separate each leaf or stalk and wash in running water or in several waters so that the fine particles of sand, tiny insects, or other parasites, and any germicide powder which may be clinging to the plants, will be surely disposed of. Then loosely wrap the clean plants in a cloth wrung out of cold water and lay away in a cold place until needed. In this way all of the freshness and crispness will be retained. Never place the stalks in water for any length of time, for they soon become water soaked. Lettuce in the head variety is a most acceptable salad in itself and is most frequently served with French dressing. The long leaf variety is more often wilted with a hot sour dressing, and the curly lettuce usually appears as a garnish for more elaborate salads. Cabbage should be chopped and then seasoned with a bit of green pepper or ripe pimento and mixed with French dressing. Such a salad is as simple as it is wholesome. A sour cream dressing is also very desirable.

The cabbage salads are not sufficiently appreciated or they would be used more frequently. These plants should all be cultivated in a very rich soil with plenty of water and sunshine, for the quicker they are grown the more tender the leaves and stalks will be.

Often the stalks are covered in order to bleach them, as is done with celery and endive.

Fruit Salads

While these are the real salad plants, there are as many salads made without them as with them. The fruit salad, usually served as a dessert, has become very popular. There are many good combinations possible, and the ingenious housewife will be governed by the materials at hand rather than by the directions of a cook book. Oranges, bananas, pineapple, grapefruit, cherries, white grapes, and apples offer many possibilities, and nuts and sometimes marshmallows are a good addition. A cooked cream dressing, or preferably a sweet fruit dressing, is used in mixing them, or occasionally the fruits are mixed and served without any dressing. When a fruit salad is prepared in place of another dessert, it is quite unnecessary to serve a vegetable salad with the rest of the meal.

Meat and Vegetable Salads

While the real salad plants and greens are generally served as an appetizer with a meat course, or to take the place of the second vegetable in the meal, there are many concoctions of meat and vegetable salads which may well constitute the main dish of the luncheon or supper. In this way many bits of left-over meats and vegetables may be attractively served and materials made use of which might otherwise be wasted.

Meat for salads should be freed from skin and gristle and chopped rather finely. Chicken is considered the most delicate salad meat, although meat left from a roast of pork or veal can be substituted in part or entirely, and few persons can detect the difference. Left-over bits of fried ham may be ground or chopped and combined with celery and dressing to form a most appetizing salad. Salmon, or occasionally white fish or lobster, may be flaked and used with hard cooked eggs, celery, and moistened with a cooked cream dressing. The meat salads are to be commended because they provide the flavor necessary to make a meal appetizing, without the

Now She's Glad She Took Advice

AND FOUND A CURE IN DODD'S KIDNEY PILLS

Mrs. Patrick Williams Tells Why She is Advising Women Who Suffer to Use Dodd's Kidney Pills.

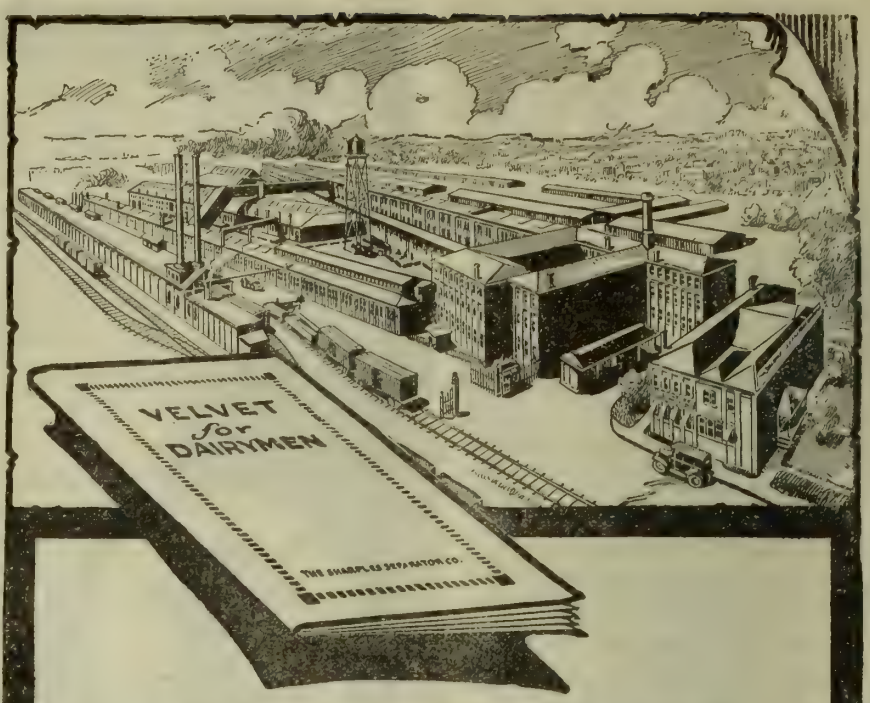
Adamsville, St. Sosime, Kent Co., N. B., May 25th (Special).—Mrs. Patrick Williams, well known here, is advising her numerous friends to use Dodd's Kidney Pills.

"I had been far from well for about two years," Mrs. Williams says. "My troubles started with a cold. I never seemed to get over the effects of it. I had cramps in my muscles and my joints were stiff. There were dark circles under my eyes, which were puffed and swollen. I had a bitter taste in my mouth, and I suffered from severe headaches.

"I felt heavy and sleepy after meals and had attacks of neuralgia. Heart flutterings added to my anxiety, and finally rheumatism set in.

"It was then I was advised to try Dodd's Kidney Pills. I cannot be too glad I did so. I took just three boxes, but they did me so much good I feel I can recommend them to every woman who suffers."

Dodd's Kidney Pills act directly on the kidneys. Every one of Mrs. Williams' ailments was a symptom of disordered kidneys. Dodd's Kidney Pills cured them all by curing the kidneys.



More Dairy Dollars

We have found a way to bring you more dollars without increased expense. We call this new profit "velvet," because it comes so easily. Our new book, "Velvet for Dairymen" tells all about it.

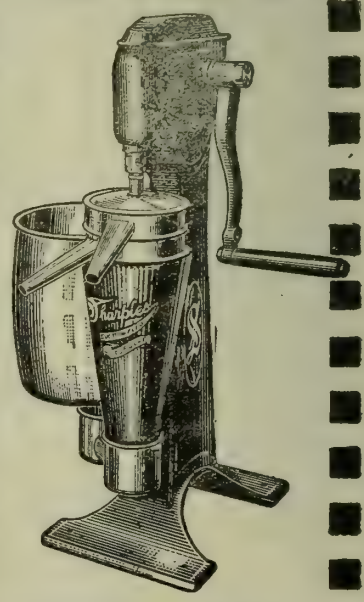
Your separator is losing cream, no matter what the make. A famous experiment station says, "*The use of the gravity can, a low speed of the separator, and an excessive rate of inflow cause heavy loss in butter fat.*" They have proven that 95% of all farm separators are turned below regulation speed. When the speed slackens, a lot of the cream escapes with the skim milk—and with the cream goes the profit.

The annual loss from imperfect separation is $47 on the average farm and upon many farms it is $100 and more. That's the tax you pay because you can't turn your separator at just the right speed all the time. But with

THE NEW SHARPLES SUCTION FEED

Separator you get all the cream at any speed.

A wonderfully simple invention enables the bowl to *drink in just the right quantity of milk* to insure the closest possible skimming. You may turn slow and make the work easy or you may turn fast and get through quicker. You simply won't lose cream with the "Suction Feed."



You get smooth cream of an even grade whatever the speed of the separator. Uniform cream makes fancy butter that brings top prices.

The supply can is only knee-high. There's no hard lifting to empty heavy milk cans.

The new machine has all the features that have made the Sharples Tubular famous and many other new vital and exclusive features found in no other separator.

Send now for our new book, "Velvet for Dairymen," and learn how to secure this new dairy profit. Address Dept 79

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expense of a regular meat dish.

The best-known vegetable salad is one made of cold boiled potatoes and hard cooked eggs with some celery and plenty of sesoning and dressing. Although it is a salad frequently made, it is seldom as attractive as it should be. Much depends upon the materials being carefully prepared and well mixed or "tossed together," as some good cooks will say. Cut or dice the materials in uniformly sized pieces, have all of the ingredients well chilled before combining. All meat and vegetable salads are improved in flavor if, several hours before adding the regular dressing and serving, the materials are seasoned with salt, pepper, oil, and vinegar. This is spoken of as marinating the salad.

Beets cooked until tender are sometimes cut in cubes and served with cabbage on lettuce leaves. A salad is also made by combining diced carrots and peas. The raw carrots cut in small cubes are a good addition to many salads and can be had the year round. Asparagus tips cooked until tender may be used with lettuce and French dressing, and occasionally string beans are appreciated in the form of a salad. The use of chopped onion for flavoring salads will depend upon the personal taste. The likes and dislikes of the people to be served must largely govern the housewife in preparing salad combinations. A well made and mixed salad is an addition to any menu, for noon or evening meal.

Salad Dressings

Almost as much depends upon the kind of dressing used and the way in which it is prepared as upon the ingredients of the salad itself. The most popular dressing is one correctly called a "cooked cream dressing"—not a mayonnaise. This is made as follows:

Mix together 2 tablespoons of flour, 1 tablespoon of sugar, 1 teaspoon of salt, and 1 teaspoon of mustard, and add to the beaten yolks of 3 eggs or to 2 whole eggs. Then add slowly one-half cup of vinegar, diluted if necessary, cook until very stiff, stirring all the time. Remove from the fire and add 1 tablespoon of butter and cool. A glass can is a suitable place for keeping this dressing, and it can be kept several weeks if necessary. For use, thin with sweet or sour cream, or with whipped cream. By increasing the amount of flour, this can be made with only one egg. This dressing is very generally liked, and can be used with any salad.

The sweet fruit dressing for fruit salads only is prepared as follows: To 2 beaten egg yolks add one-half cup of strained honey or maple syrup, 1 tablespoon each of flour and sugar, and the juice of 2 lemons, and cook in a double boiler until it thickens slightly. Cool and add 1 cup of whipped cream just before serving.

Oil Dressings

The regular mayonnaise and French dressings both require large amounts of oil. To many people this is distasteful at first, but one can cultivate a taste for it, and should do so if possible. The body is just like any other piece of machinery and needs lubricating once in a while to keep it in good running order. There is nothing better for this purpose than olive oil. The food value of the whole salad is greatly increased by the addition of a dressing rich in eggs, olive oil, or cream. The best olive oil is expensive, costing at retail about $1.00 a quart. The Spanish oils are perhaps the strongest in flavor, the French and Italian oils are more mild. Equally as nutritious and just about half as expensive as the olive oil is a good grade of cotton seed oil. It is very mild in flavor and makes a most desirable mayonnaise. Any oil for table use should be kept in a cool, dark place when not in use. Cultivate a liking for oil dressings, for they have an actual medicinal and high food value.

YOUR DEALER can always supply REGAL FLOUR but it is your place to insist.

THE ST. LAWRENCE FLOUR MILLS COMPANY, LIMITED
MONTREAL

Production and Thrift

"GAIN or no gain the cause before the farmers of Canada is as clear as it was last year—they must produce abundantly in order to meet the demands that may be made, and I believe this to be especially true in regard to live stock, the world's supply of which must be particularly affected in this vast struggle."—*HON. MARTIN BURRELL, Minister of Agriculture.*

THE FOLLOWING STATEMENTS ARE BASED ON REPORTS CONTAINED IN "THE AGRICULTURAL WAR BOOK, 1916," PUBLISHED BY THE DEPARTMENT OF AGRICULTURE, OTTAWA, ONT.

LIVE STOCK—The herds and flocks of Europe have been greatly reduced. When the war is over there will be a great demand for breeding stock. Canadian farmers should keep this in mind.

MEATS—In 1915 Great Britain imported 664,508 tons of beef, mutton and lamb, of which 364,245 tons came from **without** the Empire. Out of 430,420 tons of beef only 104,967 tons came from **within** the Empire.

The demands of the Allies for frozen beef, canned beef, bacon and hams will increase rather than diminish. Orders are coming to Canada. The decreasing tonnage space available will give Canada an advantage if we have the supplies.

DAIRYING—Home consumption of milk, butter and cheese has increased of late years. The war demands for cheese have been unlimited. The Canadian cheese exports from Montreal in 1915 were nearly $6,500,000 over 1914. Prices at Montreal—Cheese: January 1915, 15¼ to 17 cents; January 1916, 18¼ to 18½ cents. Butter: January 1915, 24 to 28¾ cents; January 1916, 32 to 33 cents.

EGGS—Canada produced $30,000,000 worth of eggs in 1915 and helped out Great Britain in the shortage. Shippers as well as producers have a duty and an opportunity in holding a place in that market.

WRITE TO THE DOMINION DEPARTMENT OF AGRICULTURE AND TO YOUR PROVINCIAL DEPARTMENT FOR BULLETINS ON THESE SUBJECTS

Tens of thousands of Canada's food producers have enlisted and gone to the front. It is only fair to them that their home work shall be kept up as far as possible. The Empire needs all the food that we can produce in 1916.

PRODUCE MORE AND SAVE MORE *SAVE MATERIALS FROM WASTE*
MAKE LABOUR EFFICIENT *SPEND MONEY WISELY*

THE GOVERNMENT OF CANADA 4

THE DEPARTMENT OF AGRICULTURE THE DEPARTMENT OF FINANCE

A SUCCESSFUL OCTEGENARIAN FARMERESS

(Continued from page 523)

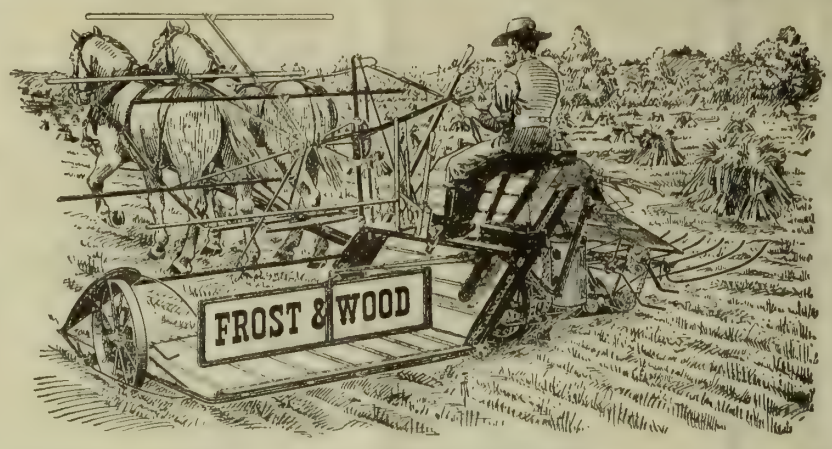
indeed wonderful of a woman of 83 years of age. She never fails o visit the stables and all the animals once or twice a day. In the spring of the year she is up and about at 5 o'clock, and sees to the horses, as well as to the calves and the lambs, and has breakfast at sharp six for the men that they may be able to get to work by seven o'clock.

She is up-to-date in her work, has all the modern tillage implements, good gear for the horses, has built since taking charge four barracks for storing grain and hay, the barn being somewhat small and of poor storage capacity; has fixed up and put necessary repairs on the barn, and also on the dwelling; has purchased two splendid horses in the last four years, paying high prices. She pays spot cash for everything, and sells only for the same. She uses her men well and pays promptly. She is a business woman in every sense of the word, and a hard-working woman at that.

The spinning wheel and the knitting needles, which are rare objects in the modern farmhouse, and curiosities to some, are to be seen with Mrs. McDonald. She spins, from the wool of her own sheep, the thread for socks and mittens, and then knits them to finished articles as mittens, socks, etc. She also had time to spin the thread to make the "filling" for a piece of "druget" to be woven by a weaver for a dress for herself. The writer was shown a dress just completed by a Souris lady tailor, which was made from "homespun," spun for herself. This "drugget" was dressed at the mill (carding) and was shown last fall at the Souris Fair. None would ever imagine it was "homespun."

This woman also finds time to read the daily papers, of which she gets two, a religious weekly, and several agriultural papers. She keeps accounts of everything, outgoes and income, and attends church on Sundays in the summer season fairly punctual. How a woman in her 84th year can accomplish so much work is truly a marvel.

"I haven't time," she says, "to think that I'm getting old."



A Binder is a big investment

The man who buys one without investigating the Frost & Wood is throwing away the 25 years of fruitful experience we have had in making Binders, and seeing them used for all kinds of crops all over the world.

The Voice of Experience Talks Loud in Frost and Wood Binders

Building Binders has always been our special study. We watch our machines at work more critically than any individual owner, and we are satisfied that for sure cutting, sure elevating, sure tying, light and fast work the Frost & Wood Binder cannot be equalled.

LIGHT-DRAFT—EASY WORK

The Frost & Wood Binder is built of high-carbon steel, displacing heavy cumbersome castings and wood. It can stand a drop into a hollow, it can stand work in the roughest land, it will handle any crop you ever saw with ease. It has a big margin of strength, yet it is the lightest in draft on the market due to our extensive use of the finest roller bearings, expensive for us to give but mighty good for you to have. No pulling or straining to work the handily-placed levers, either. We place strong helper springs to do the work for you.

SPECIAL CUTTER BAR

Knives are on the same level as platform canvas, so no short grain is lost. Platform and cutter bar readily tilted so as to just skim the ground and get every straw. Knife blades easily changed when necessary.

FORCE FEED ELEVATORS

The old bugbear, choked grain, is entirely done away with. Frost & Wood elevation is positive—the grain must pass, no matter how tangled it is. A special Relief Roller, always revolving, passes the straw from elevator to packers and "keeps things moving."

RELIABLE BINDING ATTACHMENT

Can be adjusted to give large or small bundles exactly as you wish. The whole machine is built to suit any harvesting condit on. The Knotter is a wonder of simplicity and sureness. Hundreds of letters from satisfied users always comment on the splendid F. & W. Knotter. Many F. & W. Binders have been in use 15 and and 20 years and are in excellent shape to-day.

Put time and thought into buying your binder. Write us today for our special Frost & Wood Binder Book.

THE FROST & WOOD CO., LIMITED

MONTREAL, SMITH'S FALLS, ST. JOHN

THE CLARION CALL

Last year Canada responded magnificently to the call of the Empire. The soil was cultivated to its utmost limit, with the result that a bountiful harvest was reaped. Boys and girls united with their parents in showing the good will and the proud national spirit that they possessed. They bent their energies towards making the land produce all that it was capable of doing. The times were not financially good, and bitter experience had been had with crop failure in the previous year. Nothing daunted, they went to work with determined will and persistence, and they reaped where they had sown. When the crops were gathered granaries were full to overflowing. Canada had cause for the celebration of the greatest, most intense, most earnest thanksgiving she had ever known. That there was no unmindfulness of the source from which all blessings flow was shown in action as well as in words. Patriotic gifts came from many directions in many ways. The women worked with life and love. They gave the fruits of their labors, and they gave their offspring. The men devoted their acres and their services to the cause of the Empire. Boys and girls cultivated what they termed war plots, the yields from which went towards filling the exchequer of patriotism. There were slackers then, there were Scrooges then, there are the same elements today; but the evidences of sympathy far overshadowed the discordance, and such a front of union was displayed as commanded the respect and admiration of the world.

This year there must be no backing up. Even the unwilling of last year, the Scrooges, and the men and women who put personal profit before love of country, must, if possible, be brought into line. The situation is more intense than it was. There is more suffering, there are more widows and orphans, and there are twice as many men on the fighting line and under arms. As the war progresses the slaughter becomes greater, more shipping and more property are ruthlessly destroyed, and the cry for help is keener. Were it not for the British Navy our allegiance would cost us dear. Were it not for the united armies and for the organization for protection from assassins, traitors, and incendiaries that exist in our own land we should be at the mercy of the same cruel and barbarous forces that have overrun and laid waste Belgium, Poland, and Serbia. We should be taxed beyond all bearing. We might even practically be slaves, working not for ourselves, but for tyrannical taxmasters, for men compared with whom —judging from some of their actions— Legree, the novelist's type of a brutal, cruel slave driver, was, in deeds of villainy and harshness, no worse.

The future of the Empire rested in a large measure with Canada at the beginning. It rests with us to a greater extent now. We have increased our responsibility. We have voluntarily added to the weight of our share of the titanic burden. We must bear the self-imposed load cheerfully and generously. We must show our worthiness of the trust assumed. We must prove our appreciation of the high and honorable partnership into which we have entered. We must do all this, and we must perform our tasks with, if at all possible, increased zealousness. To halt or pause would be fatal. Our works of charity must continue to the full and be added to. Our eye, not only on the present, but also on the future, must never hesitate or waver. When peace comes, our granaries and our stalls must be full.

Today we are called upon to do our share of the fighting, to care for the sick and wounded, to honor the dead, and to admire the living hero—and they are all heroes who go forth; tomorrow we may be summoned to replenish the earth, to help in the arts of peace, and to do all we can to assist in repairing the terrible ravages of a war that has taken on such proportions in magnitude and savagery that even "Armageddon" is scarcely thought a fitting descriptive term. In short, it is our duty to be prepared for any and every eventuality, both present and future. At war, we are yet not at war. We can plow, sow and reap, and tend our flocks and herds undisturbed by the thunder of artillery. We can carry on our industries without let or hindrance. We can win glory on the battlefield, or we can live our own lives amid peace and plenty. All that is demanded is remembrance of our country and truth to ourselves. That is the clarion call.

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ARTS EDUCATION
APPLIED SCIENCE
Including Mining, Chemical, Civil, Mechanical and Electrical Engineering.

MEDICINE
During the War there will be continuous sessions in Medicine.

HOME STUDY
The Arts Course may be taken by correspondence, but students desiring to graduate must attend one session.

SUMMER SCHOOL JULY AND AUGUST — GEO. Y. CHOWN REGISTRAR

WHY WE SHOULD SAVE, AND HOW

A pamphlet has been issued by the Parliamentary War Savings Committee in Britain, entitled "Why We Must Save, and How." As it is intended to illustrate the possibilities of saving by all classes, there are necessarily many hints calculated to be of value the world over and especially in affiliated countries. In the first place, it combats the notion that these people who spend all hey make are necessarily benefitting trade. On the contrary, those who save wisely advantage themselves, their neighbors, and their country. Spending money on luxury gives a certain amount of employment, but nothing like the employment that investment in desirable and necessary articles does. The best way to convey the meat in this useful and timely pamphlet would seem to be to sum-

PILES CURED at HOME by NEW Absorption Method

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

GURNEY-OXFORD PRINCE

Here is Stove Value Never Seen Before

You can now buy this splendidly built, fully guaranteed, cast iron Range from the factory or our dealers on a 100 days' approval, freight paid to any point as far west as Ft. William, for the new low price of $25.75

This may sound a very low price for a stove of the admittedly superior Gurney-Oxford make. So it is, but the value is there. The "Prince" at $25.75 freight paid is the wonder of the stove world. It is possible only through our improved methods and enormous production.

Built for Years of Service

At anything like this price you have never seen such solid construction and so many splendid features built into any stove. In all our 70 years expert experience we have never known better value, and our profit on each sale is extremely small. Only the resources of our huge foundries, the largest makers of stoves, heating apparatus, etc., under the British flag, are equal to the task of producing the Gurney-Oxford "Prince" for you at $25.75 freight paid.

Gurney Quality All Through

No matter how low our sales department sets the price it does not affect our foundries. They will not permit any Gurney-Oxford stove to go out until it has been tested and measured up to the rigid Gurney-Oxford standards. We know you must have a stove good for well-cooked, nourishing meals more than a thousand times a year for many years and the Gurney-Oxford name demands that you get only that kind of a stove.

The Gurney-Oxford "Prince" at $25.75

freight paid is wonderful value, but every page of our new illustrated Catalogue is filled with equal stove wonders. Also tells all about our new 100 days' approval selling plan. Stove buying is a very important matter so we want you to send to-day for a copy—free. It's a splendid guide to stove buying, with new low prices and full descriptions of all our stoves, parts, etc.

What the "Prince" Gives You

Shipping weight, 410 lbs., tells its story—nothing lightweight or flimsy about this special Gurney-Oxford offering. Plain but beautiful design. Gurneys do not lavish over much nickle trimming to please the eye and then skimp construction.

Four 9-inch covers, right hand copper reservoir, high shelf, two tea-pot rests as shown, $25.75 (without reservoir $20.50) freight paid as far west as Ft. William 100 days' approval or money refunded.

Gurney's New, Low Factory-set Prices

People now realize they can buy a Gurney-Oxford Quality Stove and know what they have to pay, including freight, all with the fullest guarantee of quality, satisfaction and safety, without any uncertainty, bother or dickering. One price to all, whether you buy direct from us or from our nearest dealer.

Send for this

This Free Book

Tells how and why the great Gurney Foundry Co'y fixes new low factory prices on all Gurney-Oxford Stoves, etc. It is a splendid guide to Stove buying. Send for it to-day. Use the coupon.

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Dear Sirs:— Please send, without obligation of any kind to me, a copy of your new catalogue, "The Stove Problem Solved," containing new low prices and pictures of all Gurney-Oxford Stoves, ranges, oil stoves, gas stoves, combination stoves, heaters, etc. ALSO PARTICULARS OF YOUR 100 DAY APPROVAL SELLING PLAN.

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marize its contents in brief, emphatic sentences, as follows:

Thrift is a national duty, so that the money thus saved may be invested with the government.

The more goods we buy at home, and the more we make and send abroad, the richer the country becomes.

Every dollar borrowed abroad that might be obtained at home means money going out of the country.

By devoting all our energies to producing things useful and abandoning the purely ornamental and the luxurious we are helping the country.

Women are the main power in the campaign for thrift. As leaders of the home, they can best foster economy in food and clothing.

The only money judiciously spent is that that keeps ourselves in health of mind and body, and that by investment in productiveness helps in the progress of he land and the country.

Reduction in meat eating might be generally practiced without loss of strength.

Cheese is one of the best and most wholesome substitutes for meat.

Economy and good digestion are aided by never eating bread that is not at least 24 hours old. Ten per cent of the cost of bread would be saved by rigidly adhering to this simple practice.

Fewer courses at dinner would not mean any wearing on the health, but less work and more saving.

It is in dress that women could best economize. Simplicity of material does not mean less attractiveness.

Excessive expenditures on weddings and funerals should be avoided.

Labor released from the manufacture and sale of things that can be dispensed with is available for other and more useful work.

Expenditure on golf, tennis, and other games of pleasure could be beneficially curtailed.

The giving of presents on all trivial occasions is to be discouraged, and, when given, they should be of an inexpensive and useful character.

Presents and gifts might take the form of war-loan vouchers.

Much money might be saved by [illegible] less on hobbies.

Neighbors could benefit each other by systematically combining to buy food in quantities and sharing it.

Economy today means riches in the future.

The only luxury the Empire can afford is victory.

PASTURING GEESE

It is sometimes claimed that geese spoil a pasture. Geese will not spoil a pasture unless too many birds are turned into too small a place. They will pasture a scanty field closely, but when they feed largely on pasture they are costing nothing for grain, and their droppings are enriching poor land.

Geese live long, and are profitable for breeders almost as long as they live. They should not get too fat for breeding.

A goose will lay one clutch of eggs, and then, if broken up, another, and even a third; but the last two clutches will be of few eggs. She will carefully cover her eggs with straw, and while brooding them is very apt to be cross, pecking with her beak and flapping with her wings the intruder who bothers her. When the goose is allowed to hatch her own eggs. the goslings should be taken out from under her as they hatch. Otherwise she is apt to crush them. As soon as they are strong on their legs they may be returned to her. Once well hatched and strong, they are easily reared. They should be confined for the first two weeks, and should be driven home every night when the goose is given her liberty.

When setting with hens, do not give more than five or six goose eggs to one hen. The eggs hach in thirty days—possibly a day earlier. When the eggs are hatched the hen must be watched, lest she refuse to accept the goslings and peck them to death. They should be removed from the nest and kept in a flanned lined basket until strong and the hatch is over. Let them remain warm and quiet for twenty-four hours after hatching; give them a little soaked bread and water. Goslings may have all the grass and clover they can peck from the very first; they are better off without much grain until they are a month old.

STICKY FLY PAPER

Mix equal parts by measure of melted rosin and castor oil. Stir until thoroughly mixed, which will take only a minute. While yet a little warm, spread thin and evenly on any strong paper that is not porous—old letters, catalogue covers, etc. Spread with a case knife or any straight-edged instrument slightly warmed. Leave a narrow border to handle with.

FEED DRY COWS

(Continued from page 529)

cow will vary from month to month. When you have learned these lessons with one cow, then take on another which is approaching her freshening period. You will perhaps run across different problems, but the principles are the same.

Our dairymen can get good lessons from watching how nature favors milk production. We all know how cows come up on their milk when turned to pasture in the spring. There are good reasons for this. The cow has all the fresh air she can breathe. Farmers should learn to feed oxygen as well as grain. Another thing, the cow gets all the sunshine there is. She is warm and comfortable. Sun and balmy days take the chill off the water she drinks. Finally, she is surrounded with succulent, nutritious feeds in as large quantity as she desires. Finally, I remind you that a cow never made one pound of milk except from the feed she consumed. If you allow her to decrease in milk flow, you will not get her back to the maximum until the next freshening period.

REMEDIES FOR GARDEN PESTS

Simple and effective remedies for two of the most common and destructive garden pests were recently outlined by Professor L. M. Montgomery, of the College of Agriculture, Ohio State University. Cucumber beetles and cabbage worms are among the worst pests the gardener has to fight. The cucumber beetle is a small yellow beetle with black stripes running down its back. It causes heavy damage not only to cucumbers, but to melons and other vining plants. One part of Paris Green to 50 to 100 parts of air slacked lime is a very effective remedy. This should be sifted over the plants in the morning when they are covered with dew. For the cabbage worm, one ounce of white hellebore dissolved in two or three gallons of water is used. This should be sprinkled or sprayed heavily on the cabbage. If some soap is added it will add to the sticking properties of the solution. The hellebore may also be applied in powder form. It is a poison of vegetable origin, and its poisonous properties are lost on exposure to the air for two or three days. This makes it necessary to repeat the application on the plants every few days.

SALT FOR CUTWORMS

When I purchased the home I now occupy—three years ago—I found the garden plot in a good state of cultivation and fairly free from weeds. However, in the spring when I planted it I found a good many white grubs in the ground and when my plants began to come up I soon learned that there was also a plentiful supply of cutworms. It was a continual fight through the spring to save my plants, but in spite of that I had a fairly successful season.

The following spring I got eight quarts of coarse salt and sprinkled it as evenly as possible over the ground about the time the snow was gone, leaving it to be dissolved and carried into the earth by the rains. In the two seasons which have followed I have only lost three plants by cutworms (did not lose any the first year), and Ihave not seen a single white grub.

At the rate I used the salt it would require about ten bushels per acre, but I think possibly less would be as effective. As there were evidently a few cutworms getting into the ground this year, I shall use about six quarts and see if it will be sufficient.

I have never seen this remedy suggested, although it may be known to others.—Geo. A. Whitney.

A Successful LUMBER SEASON if YOUR EQUIPMENT is RIGHT

We would like you to try our Lumbering Machinery.

A trial order would, we feel confident, be to our mutual advantage.

While we SPECIALIZE on Haulup Equipment and Lath and Shingle Machines, we are ready to give PROMPT SERVICE in any line.

Saws, Pulleys, Shafting, Belting and Babbitt STOCKED.

The Smith Foundry Co., Limited,
Fredericton, N. B.

IRON-RUST PREVENTIVES

P. M.: There are several easy ways to prevent the rusting of ploughs and cultivators and to keep the teeth bright. One is to give them a coat of thick limewash as soon as they are brought in from the field. Another way is to dissolve 1 oz. resin in 4 oz. of linseed oil, and while hot mix this with a quart of kerosene and stir well. This is laid on the smooth iron with a paint brush. Another way is to dissolve 1 oz. of camphor in some turpentine, and add to this 4 oz. of lard and 1 oz. of pulverized black lead or stove polish, and mix well. This may be rubbed on with a rag. To remove rust from ploughs or tools, nothing is better than a mixture of one-half pint of oil of vitriol poured slowly into a quart of water, and apply this to the rusted metal. Wash out with water.

LIGHTNING ROD PROTECTION

An insurance authority, in speaking of the fire losses of April last, said: "Lightning has caused considerable loss during the month, especially throughout central and eastern Ontario and western Quebec. On the 25th and 26th of the month, 34 barns and 9 dwellings were damaged in Ontario, and on the 27th 18 buildings were struck in the province of Quebec. If inquiry were made, it would doubtless be found that none of these buildings was rodded. When it is remembered that lightning loss upon farm property in Ontario and Quebec costs the insurance companies well over $400,000 a year, and that losses not covered by insurance probably amount to a nequal or even greater sum, it seems strange that farmers do not more generally adopt so simple a means of protection as the lightning rod."

Much has been said and written of recent years as to the value of lightning rods as a means of fire protection. This question has especially interested insurance companies, who have to provide for the primary loss. When, however, insurance officials make such statements as that quoted above, it is apparent that only a small part of the ultimate loss is borne by them. Farmers, especially in eastern Canada, are paying this loss. True, the insurance companies collect the money from a large number and pay it over to those who suffer from lightning, but the farmers pay the price, as well as the cost of making the collection. The heavy loss by lightning must be provided for through an increased premium paid by farmers for their insurance. It is therefore advisable for those who must pay this heavy charge to take precautions to protect property.

The data collected by United States Farmers' mutual fire insurance companies demonstrated that lightning is one of the principal causes of fire in rural districts.

Canadian farmers' mutual insurance companies are also taking a great interest in lightning losses, and almost unanimously make a reduction in premium on protected risks.

In European countries, particularly in France and Germany, all public

This is what you need

Rich Powerful Nutrients. Hypophosphites, Nerve Restoratives, Valuable Stomachics.

To Cure
Nerves, Stomach, & Kidneys.

Dr. Cassell's Tablets are a genuine remedy for all forms of nerve, stomach, and kidney trouble in old or young. They are composed of carefully chosen ingredients, each one of which has definite restorative action on the nerve centres controlling the various processes of life; and thus they give new activity to the bodily organs, and new vitality to the entire system.

Dr. Ramsay Colles, J.P. of the City of Dublin, a man of high eminence in the scientific world, says:—"I have great pleasure in expressing my satisfaction as to the curative effect of Dr. Cassell's Tablets in cases of nerve troubles. From several cases which have lately come under my notice I am able to form the opinion that Dr. Cassell's Tablets constitute a safe and reliable family remedy, and appear to be specially effective for nerve and bodily weakness."

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised modern home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five. War Tax Extra, 2 cents per tube.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.

Dr. Cassell's Tablets

GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

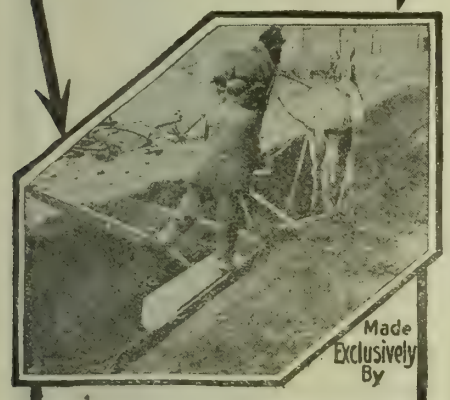
Britain's Greatest Remedy

The Martin Farm
DITCHER
and Road
GRADER
(PATENTED)

$47.50

For this small sum you can own this wonderful Ditcher and Grader—a necessity on every farm—it will clean out your ditches—run the water off your low lands—dig your tile drains to 2 or 3 feet. It will do in one day the work of 50 men with picks and shovels. It pays for itself with its *first* day's work.

Send to-day for particulars.



Preston Car & Coach Co. Limited
90 Dover St., Preston, Ont.

buildings are protected; school authorities insist upon lightning rods upon all school buildings.

With a heavy fire loss in Canada, at a time when such wastes should be reduced to the minimum, some action should be taken to protect rural property against this destructive element.

Bad Weather Sport

When rain spoils plans for the day in the bush don't put your shotgun in the rack. No matter where you are or what the weather is there is always a day's sport waiting for you with your

Dominion Hand Trap

Shoot from the porch. Work your trap from the same place. A boy can operate it, yet it does the work of a fixed trap. Always have one on your hunting trips. It will keep stormy days from dragging. Costs only $4.85.

Send for illustrated booklet.

Dominion Cartridge Company, Limited,
835
Transportation Building, Montreal.
6

INCREASE MILEAGE OF YOUR AUTOMOBILE TIRES

Automobile tires, like machines, should receive some attention and care before they reach the point of "laying down on the job." A little care in looking over a machine occasionally will prevent trouble, so will a close examination of the tires while they are still in good condition enable one to prevent much of the trouble to which tires are heir.

The proper use of the extra or "spare" tire, which every autiost should carry, will enable him to make such examinations and repairs at the proper time. tA regular intervals the extra tire should be used to replace one of the service tires, and the one removed should be gone over immediately. All cuts, cracks, and breaks should be sealed by vulcanizing and the weak places reinforced. According to "Motor," if a car is in constant service, one tire exchange per week and in rotation will enable one to keep all the tires in as good condition as possible. Of course, this period depends upon the driver and condition of the roads traveled. By this arrangement, the extra tire will be kept in good repair for emergency calls, with the emergencies reduced to a minimum, and in most cases the tire mileage will be almost doubled.

THE GOOD DAIRY COW

"What are the signs of a good dairy cow?" is a question which has been asked for years. Certain signs are agreed upon by all, but hitherto a deeply rounded bottom line has not been considered essential. Professor Haecker, who has done a great deal of investigation in this line, however, puts great value upon it. He says: Suppose we take two cows similarly built as to angularity, except that one shows great depth through the middle, and the other lacking depth; both being about the same size will require an equal amount of food for support, say 8 lb. of digestible nutritive matter. The deep cow will eat and digest 16 lb. of digestible nutrients, using 8 lb. for herself as food and support, and 8 lb. she will convert into dairy products; or, in other words, you have a half interest in all the food she eats. You are an equal partner in the business. The cow lacking depth through the middle will take about 12 lb. of digestible nutrients per day, using 8 lb. for herself as food and support, and this she converts into dairy products, in which case you have only a third interest in the food.

ALGAE IN WATERING TROUGHS

Considerable annoyance is frequently experienced with a green scum forming in watering troughs which are uncovered and exposed to bright sunshine. This growth is due to algae, a farm of lower plant life, and aside from a possible disagreeable flavor which may be imparted to the water, they are harmless. However, a watering trough in this condition is always unsightly, and far from inviting to the stock that must drink from it.

Algae growth can be prevented entirely by treating the water with copper sulphate, or blue stone, using 1½ grains to each 100 gallons of water. The copper sulphate should be dissolved in a small amount of water, and this solution added to the water in the trough.

MEASURING HAY IN THE STACK

To measure hay in the stack, find the distance over the stack, its width and its length. Subtract the width from the over and divide the result by two. This will give the average height of the stack. Multiply this average height by the width of the stack and this product again by the length of the stack, and the final product will give the number of cubic feet of hay in the usual sized stack.

In order to get the number of tons when the hay is stacked with a rounding top, divide the number of cubic feet by 422 if the hay has been stacked for 30 days or less; if stacked for 60 days or more, divide by 400. If the hay is stacked with sloping sides from base to peak, divide the number of cubic feet by 512, which will give the number of tons in the stack.

For Safety and Economy

A storm sweeps over the country. Your neighbour comes to you with a tale of woe, saying that the wind loosened his roof, and the rain did the rest—damaged stock, bills for roof repairs; wasted time.

While he is looking with envy on *your* sturdy Paroid roofs, remind him how little

NEPONSET
Paroid
ROOFING

costs more than cheap ready roofings, an object lesson in the economy of using only the standard weather-proof and fire-resisting roofing—Paroid, that has defied the elements for 18 years.

Look for the Paroid roll, and you will find one of the 2,000 Neponset dealers throughout Canada.

Paroid is made in 3 colors, Grey, Red and Green.

Write for useful book "Repairing and Building"—sent upon request—FREE

BIRD & SON Dept. M 106
70 King St., Hamilton, Ont.
Warehouses in Winnipeg, Calgary, Vancouver, Montreal, Halifax, St. John, Edmonton.

The Largest Manufacturers of Roofings, Wall Boards and Roofing Felts in Canada

Try Neponset Wall Board in place of lath and plaster on your next job.

Nasal and Throat
CATARRH

Every fourth person you meet has catarrh. It begins with running at the nose, the result of catching cold. If neglected it soon becomes chronic. Then it passes to the throat, the stomach, the bowels. It causes asthma, deafness, huskiness, hoarseness; it sets up dyspepsia and bowel troubles—there is no end to the dangers of catarrh.

Veno's won the Grand Prix and Gold Medal, International Health Exhibition, Paris, 1910.

You can cure a cold in the head in one night with Veno's Lightning Cough Cure; you can cure catarrh with it. For old-standing chronic catarrh use Veno's Nasal Tablets along with Veno's Lightning Cough Cure. These two in combination work miracles. Thousands have proved it. This British remedy has the largest sale in the world because it is the surest remedy in the world for—

Coughs and Colds
Bronchial Troubles
Nasal Catarrh
Hoarseness
Difficult Breathing
Whooping Cough
Blood Spitting
Asthma

Price 30 *cents.*

Large size containing 2½ times the quantity 60 cents. Sold by Druggists and Dealers everywhere, or direct, on receipt of price, from the sole agents for Canada, Harold F. Ritchie & Co. Ltd., 10, McCaul Street, Toronto.

Proprietors:—The Veno Drug Co., Ltd., Manchester, Eng.

VENO'S LIGHTNING
COUGH CURE

HOW TO MAKE PROFITS
BUYING
MINING STOCKS

THERE ARE ONLY TWO SURE WAYS, ONE BUYING STOCK WHEN IT IS SELLING FAR BELOW ITS INTRINSIC VALUE AND HOLDING ONTO IT FOR FUTURE DIVIDENDS

THE OTHER BY BUYING STOCK IN A PROVEN COMPANY WHICH IS EARNING AND PAYING HANDSOME DIVIDENDS WITH ACTUAL VALUES BEHIND IT

SEND US A LIST OF THE STOCKS YOU HOLD OR CONTEMPLATE BUYING

OUR STATISTICAL DEPARTMENT MAY BE THE MEANS OF SAVING YOU MONEY

PLUMMER & CO., Brokers
108 Bay St., Toronto
Connections in Principal Cities

HINTS ON GARDENING

There is no reason why any one with a little energy, a little time, a few seeds, and a love for the beautiful should not have a successful garden both for flowers and vegetables. The whole process is so creative and interesting. It seems stranges—does it not—that the little seeds, some almost as fine as dust, can produce such juicy vegetables, bright flowers, and sturdy bushes three or four feet high.

It is not drudgery to put in a garden—a little garden, I mean. It is all joy to the one who loves flowers.

To have a successful garden it is essential first of all to have good seed. After that the quality of the soil is most important; the very best is deep, rich, mellow, easily worked, and well grained. If it is too stiff, add sand and plenty of well-decayed manure. Fresh manure should never be put on a garden in spring. It is almost sure to burn the tender seedlings and roots, and do more harm than good. When the garden is under way it should be cultivated frequently. There are pointed hoes and hand rakes that help to make this work easier.

Your garden will receive a fine start if you sew a few seeds in flats (shallow boxes filled with garden soil) in the house, early in April. When it is time to set them out they should be sturdy and ready to grow right off. To have them so, they must be kept in a sunny window. They must be thinned out enough, and not kept too hot, or they will grow spindly. Never let the wind blow on them, but secure indirect ventilation. There is no better place for them than in the kitchen. The steam is good for plants. Plants that may be started in this way for the garden are tomatoes, lettuce, cabbage, cauliflower, squash, etc., and for the flower garden asters, petunias, balsams, mignonette, phlox, nasturtium, etc. Sweet peas may be planted in the open as soon as all danger of freezing is over. Seeds for later vegetables may be sown in the open early in May.

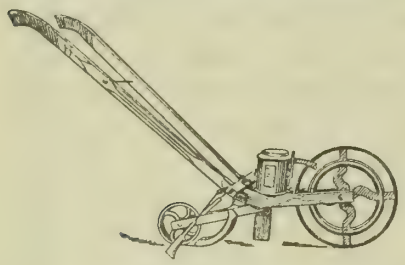
When setting out plants make a hole large enough so that the roots may be naturally extended in all directions, sift in the soil, firm down, water thoroughly, and cover the whole surface that has been moistened with dry soil to keep in the moisture. Setting out plants should be done in the evening, or on a damp, cloudy day. Should the sun be too hot, cover with shingles or other protection for a day or two.

Many people who do not care to give the labor to annuals, secure flowers about their homes by planting flowering trees and shrubs such as honeysuckle, eatalpa, lilac, wild cherry, hydranga, etc. Trees may be set out any time after the frost leaves the ground till the swelling of the leaves.

When setting out trees, remember that the under soil is usually deficient in plant food. In this case make the hole much larger than necessary, and fill with good fine garden loam. Do not cramp the roots. Spread them out well and water thoroughly before filling in the last of the soil. Keep a mulch of leaves or straw on the top of the ground, especially during the first of the season, to conserve the moisture.

For those who have no space for a flower garden, window boxes are often used to make the home beautiful and attractive. These boxes are made to fit the window, painted green, or any color to harmonize with the color of the house. Holes are bored in the bottom for drainage, and a layer of broken crockery or stones covered with fibre put in before putting in the soil. Planted with red geraniums, tuberous begonias, petunias, nasturtium, sweet alyssium, or lobelia, they look very attractive. Perhaps you may not all have time to plant vegetables and a variety of flowers, but you can at least plant a few nasturtiums in the back yard or in window boxes; give them plenty of water. They will gladden the heart and keep your homes supplied with flowers all through the summer.—Written by Mrs. Frank Shortill, of St. Marys, N. B., and read at the April meeting of the St. Marys and Gibson Women's Institute.

Garden Seeders!



A DANDY FOR TURNIPS

Makes the drill, sows, covers and rolls the seed while you walk. Does the work of two men in half the time. No better seeder built for the accurate sowing of turnip, carrot, cabbage, beet, pea, corn and all other kinds of garden seeds.

Price $7.50 Delivered at Your Station. Order To-day.

The Sussex Mfg. Co., Limited,
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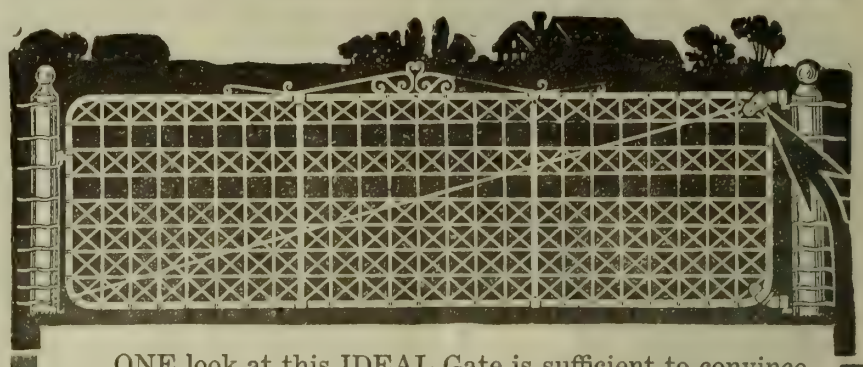
The Improved "Ideal" Farm and Stock Gates



ONE look at this IDEAL Gate is sufficient to convince anyone of the superiority of IDEAL Gates over any other make.

Improved IDEAL Gates are without exception the best and most complete gates, combining as it were all the most modern improvements with proficiency.

IMPROVED "IDEAL" Gates do not cost more than any ordinary common Gate.

Note the **Position** of the **hinge clips** at the **corner bends** instead of on the back of the gate. This improvement provides the greatest resistance ever required and ensures perfect control—especially on long gates—and it also prevents the back part of the gate from breaking or bending.

THE IMPROVED "IDEAL" FARM AND STOCK GATES EQUIPPED WITH A BRACE TIGHTENER ATTACHED TO THE TOP HINGE CLIP.

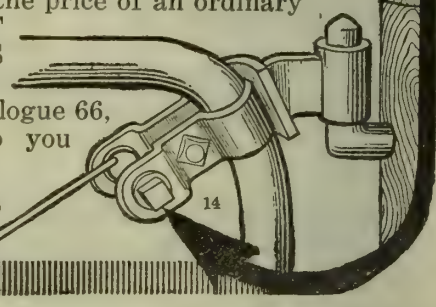
Notice how the end of the brace wire is inserted in a hole in the ratchet wheel of the brace tightener (see illustration), enabling you to tighten or replace the brace wire in less than two minutes with a wrench, when you have practically a new gate without any extra cost.

In all Ideal Gates, we still maintain the same high quality of material, workmanship and finish that has made Ideal Gates so popular.

Remember that the Improved IDEAL Farm and Stock Gates have features that no other gates sold in Canada possess.

They are worth twice the price of an ordinary gate but WILL NOT COST YOU ANY MORE, IF AS MUCH.

Ask for Complete Catalogue 66, which will be mailed to you immediately.



The McGregor-Banwell Fence Company,
LIMITED
P.O. Box 1842 MONTREAL, Que.

MARKET DISTINCTION IN EGGS

The claim that brown eggs will command a substantial price over white eggs in several of the leading eastern city markets and that elsewhere white eggs will command a premium must not be taken too literally. In the broad sense this statement is true, but it must be qualified. The Boston trade, for instance, has the reputation of calling for brown eggs, and extra-browns sell at a premium over other grades. On the other hand, New York City will pay a premium for extra-whites. Why this difference? Trade folks claim it a matter of custom. If so, the demand for the color must have originally come from the consumer.

Egg commission houses in New York claim that the call for white or brown eggs comes from the retail buyers, who probably follow their own inclinations to a certain extent. These comments refer to the general rade, and the call for brown and white eggs in this channel is probably about equally divided. The secret of New York City as a white egg market lies in the fact that the immense, although proportionately small, Jewish population, through religious and other requirements, demands a white egg. The hotel trade in New York is also large, and the better hotels must serve white shelled eggs because they look nicer. These conditions in a city like Boston are not so strongly accentuated.

It is noticeably a fact that the special call for white eggs in New York is largely for new laid eggs of fancy quality. These are received in quantity, but the demand is strong enough to offer a little higher price than for brown eggs. This is an everyday occurrence and nothing new or unusual. However, above the fancy grades may be new-laid eggs of extra quality. The supply of these is, of course, limited, and while the call is also limited, it is great enough to take up all extras at a premium. In fact, there are some buyers on the New York City market who do nothing but buy and sell these eggs of top-notch quality.

The natural query is: How much in advance of the general market do the extra quality eggs command? Seldom more than 1½ cents a dozen. In November, 1915, the extreme figure of 63 cents a dozen was reached in New York City for these extra quality, new laid eggs. All grades of white eggs were high for the season of this year; so high, in fact, as to be prohibitive to some buyers, who were forced to buy brown eggs. This exceptional condition was of small scope and of short duration. In sending eggs of extra quality and freshness to the New York trade, a producer can never know what price they will bring.—N. E. Homestead.

SEPARATOR COMPANY CHANGED HANDS

It will no doubt be of interest to our readers to know that the Raymond Manufacturing Company, Limited, of Guelph, Ontario, who for the past 16 years have been manufacturing the "National" Cream Separator, have recently sold this end of their business to the Ontario Machine Company, Limited, with head office at 18 Bloor Street East, Toronto, under the direction of Canadian separator experts.

Although the National separator will no longer be manufactured by the new company, a full supply of repair parts for the various types of the National machines will be carried in Toronto.

RECRUIT

THE FORCES OF YOUR SOIL

Commercial Humus

makes every inch of ground yield crops to the limit of its possibilities.

Commercial Humus is the ideal, safe and sound Soil Builder. It makes worn-out soil rich and makes rich soil richer. It is odorless and germless and accomplishes big results.

Carload lots in bulk or bags. Prices and literature upon request.

Ten 100 lb. Bags for $5.00

COMMERCIAL HUMUS CO.
H. F. MacClelland, Agent
Room 522
47 W. 42d St. New York

The Ontario Machine Company, Limited, will devote its entire time to the manufacture and sale of the new model Superior Separator. This machine is made with a self-balancing disc bowl, ball-and-socket spindle, and direct-to-the-bearing oiling device, and other features which combine to make the Superior a very popular and efficient machine.

Mr. L. J. Ball, who is well known to Canadian dairymen through his connection first with the Sharples Company and later with the Empire Separator Company, as assistant manager for Canada, will have charge of the sales department for the Superior separator.

The Ontario Machine Company, Limited, are very anxious to have the name of any of our readers who are owners of a National separator, so that they will be able to send them new price lists of parts, etc., from time to time, and our editor would appreciate it if the owners would write the Ontario Machine Company today.

KEITH'S SEEDS

Save Money and Buy Direct from our Seed House

Everything for Farm and Garden. We pay Railway Freight to all points in Maritime Provinces on all orders over $25.00. Be sure and see our Golden Jubilee catalogue before ordering your seeds. It contains a full list of Grasses, Roots, Corn, Vegetable and Flower Seeds. Write for one to-day.

Government Standard	Per bushel
No. 1 Mammoth Clover	$17.00
No. 1 Red Clover	16.50
No. 2 Red Clover	15.50
No. 1 Alsyke	13.15
No. 2 Alsyke	11.25
No. 1 Timothy	$5.85 per bus. 48 lbs.
No. 2 Timothy	5.75
(Extra No. 1 for purity)	
No. 2 Timothy	$5.35
Bags for Clover and Timothy	30c each

We have a small quantity of Grimm or Variegated Alfalfa. If interested, write for prices.

	Per Bus. bags free
O A C No. 72 Oats	$ 95
O A C No. 3 Oats	2.10
Oats, American Banner, registered (In 2 3-4 bus. sealed sacks.)	1.35
American Banner, unregistered	90
O A C No. 21 Barley	1.10
White Russian Wheat	1.90
Marquis Spring Wheat	1.90
Black Tares	2.75

GEO. KEITH & SONS SEEDS 124 KING ST. E TORONTO

YELLOW MILK AND BUTTER

The rich yellow color demanded by the Sydney and suburban public in dairy products is due to the character of the cow's feed. Though to a slight extent a breed characteristic, the intensity of the yellow may, within certain limits, be increased or diminished at will by changing her rations. The yellow color in milk consists of several pigments found in green plants. The principal pigment is carrotin, so called because it constitutes a large portion of the coloring matter of carrots. The other yellow pigments in milk are known as xanthophylls. These are found in a number of plants, including grass, but are specially abundant in yellow autumn leaves. These pigments pass directly from the feed into the milk. This explains the fact that fresh green grass and carrots increase the yellowness of butter, the only standard by which the average housewife judges its richness. This subject is not one of fanciful theory, but intimately concerns the pocket of dairymen. The housewife promptly complains to her grocer of deficient richness in the color of butter; the grocer passes the complaint on to his agent in Sussex Street, and this consignee pulls up the factory with a round turn. No time is lost in acquainting the dairyman that there is something wrong with the rations fed to his milking cows. Such complaints were rife during the recent dry spell on the North and South Coasts, and along the northern rivers.

On the other hand, a larger proportion of these pigments is deposited in the body, fat, and elsewhere in the cow. When the ration is changed to one that is poorer in coloring constituents, this hoarded store is gradually drawn upon, and in consequence the yellowness of the milk does not decrease so rapidly as it otherwise would. Yet the yellowness increases immediately the essential plant pigments are restored to the ration. Often the first milkings after the change will show a satisfactory improvement in color. Green grass is richer in carrotin than in any other dairy food. Cows fed generously on green grass will, therefore, produce the highest colored butter. Hence it is easy to see why complaints were rife in Sussex Street when the coastal grasses (native and English) were parched and colorless, and hand feeding with bought lines were general on a big scale. Bleached clover hay is practically bare of yellow pigments, as the resultant milk will show. Certainly the breed does influence the color of the milk fat, but varying the ration will produce a variion, more or less, in the color of the milk fat in every breed. Green corn, in which xanthophyll constitutes the chief pigment, will also produce a highly colored butter. Study of color, naturally imported to the butter by a cow's rations, is necessary for the dairyman who has first-grade prices in view.

WAYS YOUR EXPERIMENT STATION MAY HELP YOU

Are you taking advantage of the experiment station in your province? If not, you are losing valuable information which is compiled for your benefit.

Practical farm work is being done continually at the various experiment stations of the country, and the results are recorded, and bulletins on these experiments are to be had free.

Even the oldest farmer is certain to encounter some puzzling problems, and by writing to the experiment station those in charge of the work are only too willing to give out any information that is wanted.

A trip to the experiment station will be well worth your while, as you will have a chance to see the vast and valuable work carried on there and come to realize what can be accomplished.

Not only crop raising is carried on, but experiments in feeding live stock are being made from time to time, and the results of these experiments may be interesting.

The successful farmer is willing to learn, and he can find no better place than the agricultural college to get the desired information.

Farming is a business which has advanced by leaps and bounds in the last decade, and much of this improvement is due to the good work accomplished at the experiment stations.

There modern methods are tried out, and when they are profitable the farmer is informed. Many old farming ideas have been proven to be of little value by the work carried on at the experiment station.

Canada spends money annually to further the interests of the farmer, and it is up to him to take advantage of the work carried on for his benefit.

Build With "METALLIC"
EASTLAKE SHINGLE
EMPIRE CORRUGATED IRON
MAKE your buildings last a lifetime
"Eastlake" Galvanized
Corrugated Iron for roofing and
Brick Faced and Clapboard Siding, "Halitus" Ventilators, "Acheson" Roof Lights, "Metallic" Ceilings, Eavetrough, etc
Metallic Roofing Co. Limited, Manufacturers, Toronto and Winnipeg

GETTING RID OF RATS

Rats are becoming a plague in some parts of the country, and all sorts of things are being tried to get rid of them. J. R. H. sends the following suggestion to the "Pall Mayy Gazette": Let me give you an infallible method for gathering in all the rats for miles around. Get a large tub, fill it about three parts full of water. Stand a brick on its end in the middle of the tub. Get some brown paper as a bridge stretching from the rim of the tub to the brick, all round the tub, so as not to let the water be seen. Then put a slab or board up against the tub for the rats to run up. Put a piece of meat as a bait on the top of the brick, and saturate it with oil of rhodium. The rats will come from all quarters at the very smell of it. The first rat that runs up the bridge tries to get at the bait, and falls through the brown paper into the water. He then climbs on to the top of the brick and starts to squeal. All the other rats for miles around come rushing to the aid of their distressed comrade, and each one topples into the water and is drowned. Only one can occupy the top of the brick at a time.

CULTIVATION AND CARE OF CORN

Attention Early, Late, and Often Necessary for Successful Yield

Corn is one of the greatest of the fodder crops of this country. It can and should be grown more extensively on Canadian farms. If it is planted on a warm, well-drained soil, a suitabel variety chosen, and its habits and preferences catered to, it will give a good yield even in a district where the growing season is short No agricultural plant will more readily respond to generous treatment in the way of thorough cultivation and care. The land should be worked well and a good seed bed prepared before planting, as no amount of cultivation after the corn is planted can make up for the poorly prepared field.

Successful growers begin to cultivate after planting, before the corn is up. Countless weeds will have germinated before the corn, and unless these are destroyed while small they will cause serious trouble. For this purpose the weeder is a splendid implement to use before the corn is up and until it is seven or eight inches high. If a weeder is not available, a light drag harrow may be used and will do effective work. Of course, a small amount of corn will be destroyed, but the loss of the extra seed which should be sown to permit harrowing is more than compensated for in the fewer weeds, in the conserved moisture, and in aeration of the soil. The regular corn cultivator should be started just as soon as the rows are visible. The first cultivations should be deep and wide, and as the corn develops the cultivations should be more shallow.

Too many farmers stop cultivating too early, which is a great mistake. When the corn becomes too tall for the two-row cultivator, the one-horse cultivator may be used.

Corn requires an immense amount of water at all stages of its growth, and just when it is making its heaviest demands upon the soil many farmers stop cultivating, with the result that when rain comes it packs the soil, and if the ground is heavy it will bake and crack. After the corn has received its early thorough working, cultivate shallow, often and late, is a motto that every farmer can safely follow.—F. C. N.

COLOR OF SULPHATE OF AMMONIA

Farmers are sometimes rendered suspicious about the quality of a parcel of sulphate of ammonia, when its appearance does not coincide with previous experience in this respect. It may, therefore, be mentioned that the shade of color is no guide to quality. The tint depends upon a detail in the process of manufacture—and farmers need not trouble about that point.

The nitrogen contents is the real thing, and the guarantee should be at least 19.75 per cent of nitrogen. It is very seldom that the quality of sulphate of ammonia falls below this percentage, and we are pleased to say that adulteration is quite exceptional. It is a safe manure for a farmer to buy.

WHY KEEP SHEEP?

1. Sheep will eat almost all weeds. It is claimed that of the 600 weeds growing in the northwest sheep will eat 576 of them.
2. Sheep will live on short pasture.
3. Sheep are capable of utilizing a large amount of roughage to grain consumed.
4. The cost of production is cheaper than cattle.
5. Sheep are adapted to intensive methods of farming.
6. Sheep bring in a revenue from wool, the lamb, and the old ewe.
7. Some places are only fitted for the raising of sheep.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Oattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BARRED PLYMOUTH ROCKS

We have for sale a few very fine Cockerels, brothers of 1st, 2nd, 3rd and 5th prize pullets at last Maritime Fair. Also two yearling cocks, selected birds from last year's stock. Eggs for hatching are now offered until midsummer.

CRAIG BROS., Amherst, N.S.

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

Shorthorn Cattle.

We are offering for sale five Bulls, from six months to three years old, also some fine Heifers in calf.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in. Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.

E. L. Colpitts, Petitcodiac, N.B.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Pure bred Ayrshire Cow.—RALPH TAYLOR, Barss Corner, N. S.

FOR SALE—Two registered Ayrshire Bulls.—L. HERRIDGE, Hoyt, N B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

FOR SALE.—Pure bred Durham Bull, twelve months old.—HARRY PALMETER, Billtown, Kings Co., N. S.

OR SALE.—Pure bred Indian Runner Duck Eggs, $1.00 per setting.—W. A. BROWN, Greenwich, Kings Co., N. S.

FOR SALE.—One litter of Yorkshire Pigs and one litter of Berkshire Pigs.—A. E. FERGUSON, Bathurst West, N. B.

BRED TO LAY AND PAY ANCONAS.—Highly fertile eggs from splendid pens. Single and Rose Comb Anconas, Sicilian Buttercups, $2.00 and $3.00 per 15.—A. C. APPS, Brantford, Ont.

FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

FOR SALE—Pure bred Buff Orpington and White Plymouth Rock Eggs, $1.25 per 15.—ELWIN U. HARRISON, Maccan Station, N. S.

FOR SALE—A pure bred Clydesdale Stallion, rising two years, from best of imported stock. Apply to FRED E. SHARP, R. R. No. 1, Norton, N. B.

FOR SALE:—Pure bred white Orppingtons & Buff Cochen eggs for Hatching write for prices. F. V. BISHOP, Kilburn N. B.

REGISTERED GREEN MOUNTAIN POTATO SEED (C. S. G. A.), 98% in Dominion field and bin inspections. $1.50 per bushel, bags extra.—LENNOX NAPIER, Lower Woodstock, N. B.

REGISTERED CHESTER WHITE PIGS for April and May delivery. Pairs furnished not akin. Breeding stock bred by the best breeders in Canada.—W. S. COGSWELL, East Centreville, N. B.

EGGS FOR HATCHING.—Park, Pittsfield strain of heavy laying Barred Plymouth Rocks, Blanchard, Wycoff Strain, White Leghorns, $2.00 per setting, 244 egg Cyphers Latest Model Incubator for sale, good condition, price $16.00. J. H. PRICHARD, Summerside, P. E. I.

FOR SALE.—Bronze Turkey Eggs from large hens, headed by 40 lb. gobbler, $4.00 dozen; B.P. Rock Eggs, $1.50 for 13; W. Leghorn Eggs, $1.50 for 13; White Wyandotte Eggs, $2 00 for 13; Guinea Eggs, (Pearl) $1.00 for 9. Belgian Hares and Flemish Giant Rabbits, $1.00 each and upwards. No orders filled parcel post.—HOTEL DIEU FARM, Chatham, N. B.

GET YOUR NEW SUIT FROM CATESBYS, LONDON, ENGLAND, for half what you pay local tailor. Best materials, style, fit guaranteed or money back. Write for free catalogue, self measurement form and patterns. Address CATESBYS LIMITED, Canadian Office, 119 Wellington S. West, Toronto. Mention "Maritime Farmer."

HOUDANS

The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast males. Combs and wattles protected by heavy crest and beard. Eggs $1.50 per 15. Cash with order

W. J. M. MacLEOD, Sussex, N. B.

JERSEY BULLS FOR SALE

Three young Bulls from R. O. P. cows with splendid records. These are just the type of Bull required by creamery patrons who wish to improve the producing qualities of his herd both in quantity and quality of milk and our price puts them within the reach of the man of moderate means.

W. CLARK & SONS,
Maple Grove Farm, North Wiltshire, P. E. I.

HOW TO DESTROY RATS

This is the way to conquer these costly pests, as told by Mr. Chas. E. Patton, the Pennsylvania Secretary of Agriculture, and Prof. Surface, Economic Zoologist: Destroy old buildings which give protection to such pests, and which themselves are unsightly, and will be better destroyed that left standing. Pile wood on supports, so that rats and mice may not find concealment, and dogs and cats can get under to find the pests. Close holes in buildings and walls. Make a mixture of cement and sand, with a little pounded glass, and put it into the holes through which rats and mice would otherwise pass. Make special efforts to render cribs, granaries, and mows proof against rats and mice. This can be done by the use of galvanized wire netting, tin, zinc, etc. Use poisons such as barium carbonate, and even the arsenates, mixed with food for the rodents. Use caustic, such as powdered caustic soda or caustic potash, scattered where rats and mice run. This burns their feet and drives them away. Make use of ferrets in driving them out. Preserve the natural enemies of rodents, among which are owls, hawks, weasels, etc. Make use of cats, and train them to be barn cats rather than house cats. Feed them so that they will not starve and run wild and kill birds, but do not feed them so much that they will not hunt rodents. Since the rodents run mostly at night, better results in this line are obtained by not feeding the cats too much in the evening. Keep terriers, and train them in destroying rats and mice. With but little effort they can be taught their duty, and will be busy during the day, while the cats are busy at night.

CUT YOUR PIGS YOUNG

Such is the advice contained in the bulletin on Pork Production of the University of Wisconsin: "The fact that hogs may be castrated at any age with little risk is the reason offered by many farmers for not performing the operation when the pigs are suckling. However, the loss due to putting off the operation too long is greater than is commonly supposed. The older the animal the more difficult it is to handle, and the greater the loss of blood and vitality. When the operation is deferred until weaning time, or later, the pigs lie around in a stiffened condition, lose their appetites, shrink in live weight, and it often takes two weeks before they are all back again in normal condition and ready to make profitable gains. On the other hand, the pig that is castrated when from four to six weeks old loses but little blood, and continues to nurse, scarcely noticing the operation."

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E. I

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

All Bull and Heifer Calves advertised in previous issues sold. Present offering three good R O.M. Cows now milking. If desired will be bred to my herd sire, (son of Woodcrest Sir Clyde the $2000 Bull.) Also a Yearling Heifer already bred

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2 00 per 15.

PEN NO 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm," Oxford Junct., N.S.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00

Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

Registered Ayrshire Bulls For Sale.

Four P. B. Ayrshire Bulls. No. 1 is one year old. Winner of 1st Prize at last Exhibition. Dame produced 13183 lbs milk and 530 lbs butter fat in 12 mos. R, O. P. Test. His Sire's dam produced 11365 lbs of milk and 511 lbs butter fat as a 4 yr old in 12 mos R. O. P. Test.

No. 2 is 18 mos old. Prize Winner at Exhibition. His Dam now in R. O P. Test has produced in first two months of Test 2802 lbs milk and 121.4 lbs butter fat. His Sire is from Dam of above Bull.

No. 3 is 3 mos. old. His Dam is same as No. 2

No. 4 is 7 mos. old. His Dam qualified in R. O. P. Test with High Records. These Bulls are all in Excellent Condition.

ARTHUR S. DENNIS,
"Willow Farm,"
Stewiacke, Col. Co., N.S.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

Q. C. COSSAR, Prop. J. MEIKLEJOHN, Agent.

Elmhurst Stock Farm!

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys!

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

VALLEY FARM HOLSTEINS FOR SALE!

Col. George W. Fowler, O. C. 104th Battalion, who is going over seas, offers for sale his entire herd of pure bred Holsteins.

The herd includes some of the best bred Holsteins in Canada, mature cows and young stock from record making dams

Females of all ages. Herd bull first prize winner at some of Canada's leading shows in 1915, also several young bulls.

Write us your needs or better still call to see our herd in their home quarters. Prices reasonable.

FRANK MYERS,

Herdsman for Col. George W. Fowler, Sussex, N. B.

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. Q. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell ViewFarm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires!

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Small Fruit Plants

Strawberries.—Senator Dunlap, $3.50 per 1,000; other choice varieties, 85c per 100; mail postpaid.

Raspberries.—"Herbert," the only reliable, 75c per doz, mail postpaid; $2.00 per 100, $15.00 per 1,000.

Gooseberries.—"Pearl," 15c each.

EGGS FOR HATCHING.

Barred Plymouth Rocks, White Wyandottes and S. C. White Leghorns. Price $1.00 per 15.

Send for circular.

ORCHARD HILL FARM,
Brown's Flats, N.B.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle—Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine—3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
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BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

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Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

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We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

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The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
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EGGS FOR HATCHING

From two pens of Pure Bred White Wyendottes. Selected Birds. Pens headed by males imported direct from John S. Martin, Port Dover and Meleod Bros, Stony Creek, Ont, the latter bird guaranteed by them to be bred from a hen who in her pullet year laid 249 eggs. Price $1.00 per 15. Also from one pen of Single Comb Rhode Island Reds, good laying strain, good color. Price $1 per 15.

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Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

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Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

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Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

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Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

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Genuine Clearing Sale of

Standard Bred Poultry

Consisting of Barred Rocks, Buff Rocks, Single Comb Rhode Island Reds, Black and Blue Orpington, White Wyandottes, White Leghorns, Black, Cornish India Game. Apply

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

Horse Posters at Farmer Office

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IT means VALUE. Just to the extent that a car is standardized does the buyer's dollar approach the maximum of purchasing power.

Standardization means definite, proved quality, known manufacturing costs and reduced selling costs.

Of the million autos that will be sold in 1916, 75% will be standardized cars selling for less than $1000.00 each. This remarkable American achievement is the direct result of standardization.

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40% of all 1915 cars sold were upholstered in this proved, guaranteed material and in 1916 the total will be at least 60%.

Fabrikoid is the only standardized automobile upholstery. It wears better than coated splits (commonly sold as "genuine leather") and has the artistic appearance and luxurious comfort of the best leather.

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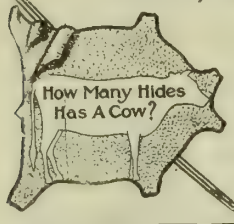

Craftsmen Fabrikoid, the artistic upholstery material for furniture and home decoration is sold by leading department stores.

SUGGESTIONS FOR IMPROVING DAIRY COWS

The country life movement as being carried on in Wisconsin by meetings, institutes, and printers' ink, is a move that should greatly aid in improving life on the farm, not only socially, but in every way. A lecture on the subject "Fundamental Interests in Country Life," delivered in the summer school of religion at Madison, Wis., recently by Mr. A. S. Alexander, of the Wisconsin Agricultural College, offers some practical suggestions of interest to dairymen. He said in part:

"It is alleged that more than 90 per cent. of the bulls in use in the dairy districts of Wisconsin are grades and scrubs. This lamentable state of affairs indicates plainly that the results of forty or more years of writing, talking, teaching, preaching, and persuading against the use of such undesirable males are unsatisfactory, and that some practical plan of actual improvement should now be introduced. Only by the general use of pure bred dairy bulls can dairy cows be graded up and improved in quantity and quality of milk production. The general use of such bulls, and employment of better methods of feeding and management, would in a comparatively short time increase the present yearly average butter production of the Wisconsin cow from 175 to 350 pounds or more. Two top crosses of pure dairy bred blood have produced a grade cow that yielded 630 pounds (10½ tubs) butter in one year. Some scrub cows produce only 90 pounds butter a year. The 175-pound cow barely pays for her board and care. The 90-pound butter cow is kept at an actual loss. Only profitable cows should be kept.

"Pure bred bulls would be used were they everywhere available. They are not available now. They should be made available. This could be accomplished by the use of creamery company capital. It would be a legitimate and profitable investment.

"The parties vitally interested in this matter are the producer of milk and the buyer of milk. If the producer had better cows, sired by pure bred dairy bulls, he would make more and better milk at a greater profit. This would mean more and better supplies and better profits for the owners of creameries, cheese factories, condensing factories, skimming stations, and milk distributing stations.

"The creamery and factory owners should buy pure bred bulls and maintain them where they can readily be used by their patrons. The service fees, calculated at cost, could be deducted from the patrons' creamery checks. The danger of disease being spread by the bulls would be slight and easily prevented by sanitary precautions. All male calves produced should be 'vealed.' All heifers should again be mated with pure bred sires. Continuous grading up should be done and no cross breeding practiced.

"Such introduction of pure bred bulls would quickly eliminate grade and scrub bulls, set the right example, encourage the owners of dairy herds to own and use pure bred bulls, and in time lead to the ownership of pure bred dairy cows by the creamery companies. Wisconsin needs and should have put into practical use every pure bred dairy bull produced in her domain. Hundreds of such bulls are now sold out of the state each year. The plan proposed would lead to the home use of all of the bulls we produce.

"Let us stop merely advising the cow owner to use a pure bred bull; place a pure bred bull where he can use it, and then get him to use it. If this is done improvements will be sure, rapid, and profitable."

THERE IS MONEY IN IT

Today the prudent farmer hardly dreams of planting seed grain without testing it. He realizes there is on deposit in the Bank of Nature a huge sum of money, much of which may be his if elementary rules are followed in seeding and cultivating.

The average dairyman with twenty cows may reasonably expect as his share of nature's hoard a yearly income of two thousand dollars if the resultant crops are marketed through suitable cows. But can the unselected, untested cow be expected to take a prominent part in that annual distribution of nature's wealth? She may be fed and cared for to the best of her owner's ability, but there seems to be a loose end if he does not turn round and test her, determine her ability to turn the vast deposits in nature's bank into a round nine thousand pounds of milk, and leave a clear profit if milk fetches one-twenty per hundred.

Just guessing at seed vitality and power to grow is queer work; guessing at a cow's production and profit is risky and unnecessary. It is very risky because many a dairyman is deceived without the use of scales and test, and unnecessary because the dairy division at Ottawa supplies, free of charge, milk record forms. Write for them, either the three-day per month or the daily kind, with a herd record book. Their use gives certainty. Test your cows. There is money in it.—C. F. W.

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1000 1 lb. Printed, - -	$3.30
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500 2 lb. Choice Dairy Butter,	$1.43

Parchment marked "Choice Dairy Butter"

500 Sheets for $1.15, Postage Paid.

The Maritime Farmer
SUSSEX, N. B.

ONE CENT A WORD

WANTED.—A good new milch cow, grade Guernsey or Jersey perferred.—MRS. A. M. WILSON, Erskine Street, Dartmouth, N. S.

FOR SALE.—Eight six-month-old best registered Ayrshire and Holstein Bulls, $50.00 each. —E. M. WHEATON, Putnam, Conn.

WANTED.—An experienced herdsman to take charge of a herd of Holsteins. Apply, stating wages, &c , D. R. NICHOLSON, Coxheath. N. S.

EGGS FOR HATCHING.—Pure bred Rose Comb Rhode I land Reds. Good winter layers. $1.00 per 15.—MRS. B. H. SMITH, Young's Cove Road, N. B.

EGGS FOR HATCHING AND BABY CHICKS from Imported Heavy Laying Strain of Barred Plymouth Rocks and White Leghorns. $1.00 per setting—J. H. PRINCHARD, Summerside, P.E.I.

PURE BRED HOLSTEINS FOR SALE.—One Bull, 17 months old; one Bull Calf, 4 months old; one Heifer Calf, two weeks old; of excellent breeding on both sides. For particulars write ROBERT C. HICKS, West Bathurst, N. B.

BOYS AND GIRLS MAKE $1.00 selling 25 packages Empire Court Plaster. Three colors. Antiseptic. Sells quick at 10c each. Order now. Send no money until sold.—VINCENT DAVIS, Box C, Beebe, Que.

HATCHING EGGS.—Test 90%, fertile vigorous pens; exhibition quality; unexcelled winter layers. Single and Rose Comb Anconas, Sicilian Buttercups, White Wyandottes, $4.00, $3.00, $2.00 fiftee .—A. E APPS, Brantford, Ontario.

Five Guernsey Bulls for Sale

We have some extra good quality Guernsey Bulls from Record of Performance dams. We must reduce our stock and will sell at very low prices. Write for particulars.

JOHN N. CHUTE,
Berwick, N. S.

FOR SALE!

Handsome Road Horse, young, kind and fearless, well bred and a fast trotter. Safe for a lady to drive. Would exchange for a good working horse.

MRS. A. M. WILSON,
Erskine St., Dartmouth, N. S.

ADVERTISE IN THE MARITIME FARMER TO GET RESULTS.

83 Acres $1400
Stock and Tools Included

40 acres of this in rich loam soil, the kind on which Kennebec Valley farmers around here raise 300 to 400 bushels potatoes per acre; nice lot of wood, some timber; variety of fruit; good 7-room painted house; 40-ft. barn with cellar; large poultry house. Owner wishes to make quick move and low price is $1400, part cash. If taken immediate y horse, cow, hens, farm tools, machinery. 2 stoves, dining oom, sitting room and other furniture, with sewing machine, etc., thrown in. Near neighbors and school, daily mail, on cream route; near large lake. For pictures of neat buildings see page 7, "Strout's Money-Making Farms," just out, copy free. E. A. STROUT FARM AGENCY, Dept. 2812, 294 Washington St., Boston, Mass.

90-Acre Farm, $800

Here is one of the most remarkable farm bargains in years; 40 acres in fields for corn, potatoes and hay; 10-cow pasture; wood and fruit; 5-room cottage house with attic; large barn in good condition, shop and 2 poultry houses. Daily mail, near neighbors, half mile to school and only ¼ mile to salt water. Owner in distant state needs quick cash and it is yours for $800. This is a dandy buy for investment, summer home or all-the-year farm. Don't wait, write to-day for your free copy of "Strout's Money-Making Farms," and get travelling instructions on page 9. E. A. STROUT FARM AGENCY, Dept. 2912, 294 Washington St., Boston, Mass.

Eggs for Hatching from Exhibition Matings

Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

Single Comb R. I. Reds.
Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

Eggs from these pens $2.00 per 13.

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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ARTIFICIAL FARM DRAINAGE

By W. W. Hubbard

Supt. Dominion Experimental Farm, Fredericton, N. B.

No arable crop will give profitable yield in New Brunswick unless the soil in which it grows has air and warmth as well as moisture.

We have an average precipitation on our land during each twelve months of almost four feet of water. This large quantity of water goes off our land either by passage over the soil in the lower levels, through the soil to subterranean water tables, or it evaporates. Sometimes it does not get away naturally, but submerges or saturates areas of land for lack of natural means of escape.

Fortunately for us, our province is so well supplied with natural drainage by hills, brooks, and rivers that we do not, except in a very few localities, need large and expensive drainage canals as an outlet for any farm drainage we require.

Much of our land also in parts is fairly well drained naturally, but on the other hand nearly every farm has areas where heat and air, in the early part of the season at least, cannot do their work in facilitating plant growth because the soil is so full of water the air cannot get into it and the water makes it too soft to cultivate.

Were our growing season two or three months longer than they are, some of this soil might dry by natural means sufficiently to give a good crop, but here where every day from the first of May on is so valuable for plant growth, this soil that does not dry early is usually unprofitable.

While for the above reasons it is most certainly unprofitable to attempt to crop wet land, it is not always good investment to drain it. Regard must be had to the proportion of the farm requiring drainage, to the markets, to transportation, to the amount of money invested in buildings and other improvements, and perhaps other considerations affecting the desirability of the farm as a home, as well as the probable cost of drainage, before any farmer can decide whether or not it will be profitable to drain. Where a farm is well situated the farmer already established on it and desirous of remaining there, and there are no great difficulties in getting an outlet, it will pay the farmer well to drain the limit of his means each year until his wet land is all made fit for crop growing. Well laid underdrains are permanent; nothing but an earthquake can destroy them, and they will work for the farmer every minute of every growing season indefinitely.

How shall we decide if land needs drainage? This cannot be accurately foretold without knowing the history of the land for at least one wet season. If land does not dry out sufficiently to work without puddling within a week after the frost comes out in the spring it needs draining. If the water stands on it over night it needs draining. If it bakes hard during dry weather it needs draining. If coarse and undesirable grasses, rushes, sorrel, and weeds of various kinds thrive better than clover and timothy it needs draining.

The excess of water may be taken off the surface and out of the soil by either open drains or underdrains, or sometimes by boring holes through an impervious subsoil to a porous strata beneath. Usually a combination of open drains and under drains are required. Boring through the subsoil sometimes is very cheap and effective in the cases of cuplike depressions, where the cost of giving the water a natural run would be very expensive.

In the case of some farms the drainage first required consists of an open drain or a covered drain here and there to dry wet areas that break in upon fields where the major part is naturally drained. Usually a man with ordinary intelligence can do the laying out of such drains without going seriously wrong, and can add greatly to the value of his farm by perhaps a small outlay for drainage.

On a large proportion of our farms, however, a survey of the farm should be made before any great expense is gone to by some man with practical experience of drainage and with the necessary instruments to run lines and levels, so that a system which can be developed to accomplish the best results for the least expenditure may be properly tarted. The possibility of having to deepen, change location, or otherwise go over work which may be satisfactory for a limited area, but which will not correlate with drainage that may be required on adjacent land, can thus be avoided.

There is, therefore, perhaps no greater service which the Department of Agriculture can do than to make it possible for farmers to secure the services of a competent drainage surveyor at a small cost. Such a man can ascertain the best points for outlets, show where open drains are necessary, and locate lines for an under drainage system that will work; give the sizes of tile required for the various lines, and then make a map from which the work may be laid out and pursued from time to time as opportunity offers.

I am informed by Hon. Mr. Murray that his department is prepared to continue and expand the work begun last season of sending qualified men to make drainage surveys for those farmers who file a request with him and give guarantees of what they propose to do, and that he will also keep the steam ditcher owned by his department steadily at work for those farmers who can arrange for its use.

The Cost of Drainage

It is impossible to give an accurate forecast of what a drainage system will cost per rod, or per acre, until a very thorough examination is made of the nature of the soil and subsoil and the depths to which it is required to go to get suitable grades and outlets, as well as how close together the drains must be to drain the land. In our generally rolling country, grades and outlets are not difficult, but there is a great deal of subsoil that is. On the Experimental Station land, for instance, outside of perhaps 20 acres, the 370 acres lying between the C. P. R. track and the St. John River has a tenacious clayey subsoil with many boulders in it that makes machine excavation very slow and hand work very laborious and expensive. In most parts, after the top 18 inches is removed, the pick must be used in every inch below, and boulders are encountered that require the use of considerable quantities of dynamite. Explosives add considerably to the cost in two ways. First, their own cost (from 13c. to 20c. per pound), and by causing much loss of time in that the ditchers must quit work and retire to a safe distance every time a charge is ready to be ignited. While a power ditcher can excavate to a depth of 30 inches for 30c. per rod, and sometimes, under very best conditions, for slightly less, and hand excavation can be made for 50c. per rod, under the conditions at the Experimental Station the cost has been $1.70 per rod.

Besides the cost of excavation, in the case of under drains, he cost of the tile, the stone, or the wooden pipe have to be considered.

At the present time tile are much higher than they might be in New Brunswick. At the Experimental Station three-inch tile have cost us from $15 to $28 per thousand feet, and larger grades in proportion.

To give a general idea as to cost, the following figures may be taken.

With tile at the given price per thousand, soil that will enable a power machine to dig to a depth of 39 inches at 30c. per rod, and a horse device for filling in the ditch, the following will be the cost per rod:

	Tile at $15.	At $20.	At $28.
Tile	24.8c.	33c.	46.2c.
Excavation	30	30	30
Distributing and laying tile ...	4	4	4
Filling ditch ...	5	5	5
	63.8c.	72c.	85.2c.

Cost per acre of tile drainage with tile at different prices and with excavation costing from 30c. per rod to $1.70 per rod.

These figures seem large, and they are; but if the land to start with brings no returns, or very uncertain ones, drainage will practically eliminate the uncertainty and will give a crop where none grew before in the case of saturated land, in the case of wet and slowly drying land it will often double and quadruple the crop yields.

If $200 per acre is invested in draining, it means, if money is borrowed for the purpose, an annual interest charge of $12 per year, and with many crops this amount extra will easily be realized and a substantial margin left with which to reduce the amount of the loan.

Land under drained which gave only a half ton of almost worthless hay per acre I have seen yielding, by the aid of cultivation alone, from 2½ to 3 tons of the highest priced Timothy hay, worth this year from $13 to $18 per ton. At the Experimental Station we had a field of four and one-third acres so wet that it had never given anything but a light crop of hay. After draining it at the cost of $75.00 per acre, with the help of the power ditcher, we had the following season 340 barrels of potatoes from it without the application of $1.00 worth of manure. The potatoes yielded at the rate of 78½ barrels per acre, and sold for $86.35 per acre. Deducting cost of raising them, $38.00, it left $48.35 profit. This would pay the interest on the money invested of $4.50 and leave $43.85 to go against the cost of drainage, thus in one year reducing the indebtedness against the land to $31.15 per acre.

It is not absolutely necessary to use tile for under drainage. I know of a farm on which over two miles of stone under drains are laid, some of them down for over 50 years, and working perfectly yet. In some of these drains a pipe from 4 to 6 inches in diameter was made by laying stones on each side and covering with a flat stone; in others a cedar pole was laid in the middle of the ditch and flat stones laid up against it. In both cases the ditch was filled to within eighteen inches of the surface with small stone thrown in loosely and covered with either cedar bark or spruce boughs.

On other farms I know of under drains being made with three round poles, two on he sides and one on top, and these covered with small poles and spruce boughs. These drains were laid in 1875, and in 1908 were working as well as ever.

On the Experimental Station last year we drained an acre and a quarter with poles laid as above, and the system worked perfectly. The cost was, however, greater than tiles without paying any [illegible] for the poles.

In sections where lumber has been very cheap, three 2-inch planks in the form of a box without a bottom, and two planks in the form of an inverted "V" have been laid, and done good

(Contnued on page 580)

Vital Factors That Affect Farming Success

Thorough Tillage, Careful Seed Selection, and Better Management Essential to Large Profits

About three hundred years ago white men first began to practice agriculture on the continent of North America.

One hundred and fifty years ago most of the fertile valleys of Eastern America were occupied by farmers.

A little over one hundred years ago the first settlers came to Western Canada, but not until fifty years ago were all the best lands in the humid regions of the East taken up.

As late as 1850 there were practically no farmers in that immense area in the interior of this continent, extending from the Mississippi and Red Rivers on the east to the Rocky Mountains on the west.

This was all a vast plain, unpeopled and uncultivated, the home of the buffalo and the Indian. Our geographies characterized it as the "Great American Desert."

Yet within the memory of men now living this immense plain has been settled, and during the last forty years 1,500,000 people have come to establish homes in the Northern end of this so-called "desert" area. I refer to the provinces of Manitoba, Saskatchewan, and Alberta.

Some of the men have made fortunes; many have made a living; but some have failed to make either. We have faced, and are facing, difficult problems—problems of production, problems of transportation, problems of marketing, and with these we have undergone, and are still undergoing, the hardships of the pioneer.

I shall confine myself today to a discussion of three only of the problems that face us as farmers—the problem of Crop Production, the problem of Profit, and the problem of a Permanent Agriculture.

The Problem of Crop Production

The conditions that must be provided before crops can grow are known today. Nature supplies most of them with a lavish hand, but under some circumstances she provides one or more of them in but limited quantity. It is man's duty to find out the ones tht are supplied in smallest quantity—the ones that limit the yield, the ones that cause low productiveness—and then it becomes his business to make up the omission if it can be done at a profit.

In order to do this the crop grower must know two things:

(1) The factors that are essential to plant growth.

(2) The means at man's disposal for controlling or influencing them.

The Factors Essential to Plant Growth

The only things that are absolutely necessary before plants can grow are:

1. The seed—the life principle, the reproductive part.

2. Plant food—the chemical elements of soil, water, and air that are available to plants, and that are necessary for growth.

3. Water—a plant food itself, and also a carrier of plant food from the soil to the plant.

4. Heat—without which the life processes in plants cannot go on.

5. Light—for the synthesis or building up of organic elements of plant food.

6. Air—which not only supplies a large part of the food of plants, but which in small quantity in the soil provides a desirable environment for plant roots, and at the same time plays a large part in the development of "available" plant food.

Nature's Work and Man's

If Nature or man provides these things in available form and in suitable quantity the soil will produce abundantly.

Nature supplies plenty of air above ground and in all except humid climates or low-lying soils, or very heavy lands, sufficient in the soil as well. She also provides sufficient light, except where trees, or weeds, or other obstacles intercept the rays of the sun.

In northern climates nature sometimes fails to provide enough heat in spring and fall to mature crops, in which case man must either add to the supply or take such steps as will offset the danger from frost. This is one of the two chief difficulties facing the crop grower in Western Canada.

In humid regions the supply of moisture from the clouds is generally sufficient to produce large returns. In arid and semi-arid climates insufficient moisture falls every years to produce large crops every year, with the result that the supply of water must be increased artificially, as by irrigation, or steps must be taken to store one season's moisture in the soil for the use of the next season's crop, as by summer-fallowing.

From 250 to 1000 pounds of moisture is used up by the plant in the formation of one pound of dry matter in its tissues. In Western Canada we receive from 12 to 22 inches of water from the clouds annually. Some places receive twenty-five to fifty times that much. Our supply is small, the need is large. Man must furnish what Nature does not supply. Otherwise he must be content with low yields. The efficient utilization of our precipitation for the development of latent wealth that is in our soil is the biggest material problem Western Canada has to face. Water is generally the "limiting factor" in crop production here. In other words, it is the chief cause of low yields.

The supply of plant food in most soils of humid areas, and in some dry areas, is more or less limited. The result is that the maintenance of plant food is often the chief problem of those regions. In Western Canada our normal soils are rich. The total supply of the chemical elements essential to plant growth is relatively large. It would seem that our immediae problem is one of developing the resources of our soil, and that the maintenance of the plant food the soil contains should be secondary to profitable production.

The seed we sow may be good or poor. It is man's privilege to see that it will germinate vigorously, that it is free from disease and admixture, and that it is a sort that is suited to the climate and soil where it is to be planted. More than this is not necessary in good seed.

Man Co-operates With Nature

The means at man's disposal for controlling or influencing the factors that are essential to plant growth are:

1. The choice of suitable crops.
2. Suitable crop management practices.
3. The improvement of crops.
4. Irrigation or drainage, or both.
5. Tillage.

The Choice of Suitable Crops

The experience of men and the records of our experiment stations are available to teach us the crops that are suitable to our climate and soil. There is little excuse for using unsuitable crops today. Some doubt exists concerning the relative value of different varieties for some local climates and soil conditions, but even these are being quickly dispelled. One needs but refer to the nearest experiment station for the result of comparative tests. If these are not conclusive, cooperative trials on one's own farm should be. The value of many new and untried crops should be determined, and the suitability of different classes and types of crops for peculiar local soils or climatic conditions is a line of work that needs further investigation.

Suitable Crop Management Practices

The cleaning of the seed, its treatment for disease, the time, rate, and depth of planting, and the time and method of harvesting and curing are crop management practices that offer many opportunities for errors. Practice and science have, however, given us data that is a safe working guide to the successful prosecution of each of these and more specific information is fast accumuating. No one need long remain in the dark concerning the "crop management" practices now recognized as suitable to different portions of Western Canada.

The Improvement of Crops

We are improving our crops today by doing two things: (1) Preventing them from deteriorating. (2) By increasing their hereditary power, or improving their quality or other economic characters. The first is the business of the farmer; the responsibility for the second lies with our experiment stations.

Our crops deteriorate by admixture with weeds and other crops, by attacks of disease, by drought and frost, and by improper care of the seed. The prevention of this as far as is possible is necessary in order to maintain productiveness and quality. It is not always within man's power to do these things perfectly, but the better they are done the better the results will be.

We increase the hereditary power of our crops by selection and by crossing followed by selection. It is true that "like generally produces like," but it is not always so. Variations occur in all our crops. It is necessary, then, that the undesirable variants be eliminated, and the favorable ones isolated, tested out, and if better than the parent increased and made available to the crop grower. This is accomplished by the selection of individual plants, the production of the seed in a "pure culture," testing its hereditary power and constantcy by its yield and trueness of type, and then increasing as quickly as possible and make it available to the "trade."

"Crossing" is resorted to: (1) In order to produce variations so as to give greater opportunity for selection; (2) To engraft on a race some desirable character possessed by another. Crossing or breeding, the intermixture of the blood of two parents, results in many new recombinations of characters, some one of which may be the one desired by the breeder. This must be found, isolated, tested out, increased, and then distributed. Marquis and several other of our leading varieties were produced in this way.

Irrigation and Drainage

In dry climates moisture is the limiting factor in crop production. If water can be secured by artificial means a profitable agriculture may result.

In wet climates and low-lying soils moisture may also limit the yield, not because there is too little, but because there is too much in the soil. Under such conditions the removal of the surplus by artificial drainage is desirable.

We practice irrigation in parts of Western Canada. Over most of our country irrigation is not possible because water is not available. Drainage is not an important problem. Outside of a few local areas and on some low, flat lands, land drainage is not a serious problem with us.

Tillage

Tillage is the greatest means at man's disposal for controlling the conditions that at the present time are causing low yields on the farms of Western Canada. It is by far the largest single item on the cost side of the crop account. It is universally used the world over. Yet its practices are as fruitful of debate and as difficult to agree upon as the planks in the platform of a political party. Tillage is the most important subject connected with crop growing, and at the same time it is the one upon which we have the least data concerning the relative value of different practices.

In the dry year of 1914 the yields of Marquis wheat at Saskatoon ranged from six bushels per acre to thirty-two. In the wet year of 1915 they ranged from 17 to 47. The differences were due entirely to the different tillage practices followed.

Our observations have taught us that among other things tillage may be used:

1. To store moisture in the soil, as be deep plowing early in the rainy season.

2. To conserve moisure in the soil, as by the granular mulch on the surface resulting from surface cultivation.

3. To facilitate moisture in the soil, as by firming loose soils and loosening hard soils.

4. To modify soil temperature, as by lessening evaporation and by firming the soil over the seed.

5. To increase the earliness of a crop, as by packing, storing less moisture, and developing less available plant food.

6. To increase or decrease the air content, as by loosening hard soils and firming loose soils.

7. To develop available plant food, as by modifying the heat, moisture, and air content of the soil.

8. To kill native grasses and shrubs, e.g., plowing in a dry time.

9. To control weeds, as by surface cultivation, to expose the roots to sun and wind.

10. To control soil drifting, as by the practice of shallow ridging and the use of the granular mulch.

11. To dispose of rubbish and cause its decay, as by plowing same under.

The Problem of Profit

It is not enough that we should know the factors that are essential to plant growth and the means of controlling them. The intelligent farmer does not farm for his health alone. For him there must be some profit after the cost of production has been met.

It is not difficult to grow crops. It is not very difficult to grow 40 bushels per acre every year. But it is a difficult matter to grow crops at a profit, even 40 bushel ones.

Factors Affecting Profit

Suitable crops planted in productive soil according to up-to-date methods may not yield profitable returns. In order that crops be produced profitably not only must the conditions of growth before mentioned be provided, but the crop must be protected from:

1. Weeds, which rob it of its plant food and moisture and increase the cost of production.

2. Insect, animal, and bird pests, which lessen the yield or quality either before or after maturity of the crop.

3. Plant diseases, which nourish themselves on the tissues of plants

and thus lessen their yield or quality, or both.

4. Severe winds, which injure the soil and damage the crop by "drifting," or by stunting, lodging, or shattering the grain.

5. And the bushel cost of production must be lowered or the price increased.

Means of Controlling the Factors that Lower Profit

The most effective means of controlling the factors that lower profit are:

1. The practice of a crop rotation.
2. The use of live stock.
3. The application of business principles to the management of the whole farm—the land, the stock, the machinery and other equipment, the labor, and the finances.

Crop Rotation and Live Stock

The use of a suitable crop rotation is the most efficient method of combatting annual and biennial weeds. Live stock will aid in controlling many more. When crop rotation and live stock control weeds they do so at no cost to the farmer. They lower the cost of production. In fact, live stock changes an item of cost—viz., weeds—to an item of profit.

In our opinion, we shall control the present situation when we adapt our system of farming to meet the conditions that have caused and are now causing low yields and poor quality in our crops. That adaptation will include a rotation of crops which will aid in controlling weeds and drifting soil, in lessening the cost of production, and in building up a more permanent agriculture It will necessarily include live stock to make use of the forage crops that must be grown, and to lessen the amount and thereby the cost of the tillage necessary to control weeds.

It would seem that the rotation should include a grass or grass-legume crop to aid in the control of annual and biennial weeds and an intertilled crop to help fight the perennial weeds. What these crops are to be, and the sequence they will follow, you and your experiment stations must work out. Corn, alfalfa, western rye grass, timothy, winter rye, beardless barley, and possibly red clover, together with the cereals now commonly grown, seem at present to offer the greatest promise.

Such a change on all the farms in Manitoba will require an initial outlay of enormous capital for fencing, buildings, and stock. We shall have to make the greater part of this money ourselves. Our problem then will be solved but slowly. Nevertheless it will be solved. It is largely a rotation, a farm management, and an economic problem. The purely agronomic or crop and soil phases of it are at least difficult to answer.

Business Farming

Time was when the farmer did not need to be a business man. He produced his own food, he grew and manufactured his own clothing, and built his own house. He lived unto himself largely. He needed little business training.

The modern farmer must be a business man. He cannot live unto himself. Today he must spend. Therefore, he must have something to sell. Therefore, he must do business. It does not take long to learn the art of farming, but it takes some of us a life time to learn the art of successful farm business. We must lower the cost of production or we must get a better price. The former is our privilege; the latter may or may not be.

What we as individuals need today is to give more attention to mathematics in relation to our business and less to faith in salesmen and hope in the weather and the "greater production" theory. Our profits are determined by the difference between our receipts and our expenditures, and not by our gross income. What we as a class need today is greater co-operation, not only in marketing, but also in buying our goods. As a class we are slowly learning the lesson of co-operation. We admire the Grain Growers' Association and related co-operative enterprises. They have done splendid work in the interests of the farmer. Let us hope that this Association will always be actuated by fairness, but let us have our due reward.

The Problem of a Permanent Agriculture

We are hearing much today about the "depletion" of our soil, the loss of "fertility," and the "exhaustion" of plant food from our pland. From another quarter we hear about the wonderful productiveness of western soils —"the richest in the world," and about their "inexhaustible" supply of fertility.

One hears of a man whose soil, after continuous cropping and no return of plant food, is producing as much or more than it did a generation ago, and we are led to ask ourselves: "Where is truth? Do soils 'wear out'? Can they become 'depleted'? Are they being exhausted or not?"

These are questions the answers we make to which will have a very important bearing of the future development of Western Canada.

What is fertility? In its narrowest sense it is plant food in the soil the chemical elements plants use in growing. In its broadest sense it is ability to produce crops; it includes "available" plant food, and heat, and water, and air, and a suitable environment for seed and plant it means productiveness.

Soils do not become "depleted" or "exhausted" of the plant food elements they contain, but they may become depleted of their "productiveness."

Our normal soils contain enough nitrogen in the surface 6 2 3 inches of an acre to grow 50 bushel crops of wheat every year for 125 years, if all could be used and there were no losses except through the crops themselves. But plants cannot use more than two per cent of this nitrogen in any year. The balance is not available. After we grow 125 crops there will still be much nitrogen left, but with our present method there will be little productiveness left. Our soils do not become depleted of these elements, even the abandoned farms of the east contain considerable quantities of these, but our soils do become depleted of their productiveness, and that concerns us vitally.

We must not let the supply of total plant food get so low that the small percentage that becomes available to plants annually will be insufficient for a large crop.

Neither must we let other conditions, such as lack of moisture, weeds, drifting soil, and loss of organic matter, lower the "productiveness" of our soils.

A "poor" soil may be productive, a "rich" soil may be unproductive.

If a system of permanent agriculture is to be established on our western prairies, and the future of our state depends upon its establishment, we must not carry our wheat system too far. We cannot eat our cake and have it. We are selling our soil at the rate of 25 cents per bushel of wheat. We can afford to do that for some time, but we can't afford to do it indefinitely. On some soils we can't afford to do it at all. On others we can do it for a generation or more without serious injury.

If we had to replace the plant food in the surface 6 2-3 inches of an acre of our normal soils, it would cost us $1,250.00. In that volume of soil there is the equal of 5000 bushels of wheat. Men would get it all out at once and leave none for future generations, but Providence has wisely provided that only two per cent of certain elements, one per cent of others, and one-tenth of one per cent of still others can be annually released from the soil. We cannot deplete our soils of their wealth if we would, but we can and are depleting them of their productiveness.

In the final analysis, our ultimate success as a nation depends not only upon our ability to produce profitable crops now, but upon our ability to keep on producing profitable crops.

The most reliable information the world affords shows us that in England, land cropped continuously to wheat for over sixty years produced an average of 12 bushels per acre, when grown in a rotation of turnips, barley, clover, and wheat it produced 25.6 bushels per acre for the same length of time. The most reliable information that America affords shows us that in Illinois corn grown continuously for twenty-nine years produced 27 bushels per acre, while in a rotation of corn and oats it produced an average of 46 bushels. In a rotation of corn, oats, and clover 58 bushels; and when manured in the last rotation 81 bushels per acre; and when manured and fertilized with chemicals 96 bushels of shelled corn per acre.

The air over one acre of land contains seventy million pounds of nitrogen. This is sufficient to produce 50 bushel crops every year for a million years, yet farmers in some places are paying 15 cents a pound for nitrogen. Nitrogen in the air can be secured at no cost to the farmer if he will but grow some legume crop at intervals. These have the power of taking the nitrogen from the air through the medium of bacteria that live in nodules on their roots.

Tillage, the choice of suitable crops, and suitable cultural practices will enable us to develop the resources of our soil. Business methods and in some places a rotation of crops and the introduction of live stock will enable us to produce crops more profitably; but only the use of legume crops, the practice of a crop rotation, and the return to the soil of some of the plant food we removed in crops and fallowing will enable us to build up a permanent agriculture, without which the future of the state is not a pleasant thing to dwell upon.—Prof. J. Bracken, Saskatoon Agricultural College.

Reducing Foal Mortality to a Minimum

Judicious Feeding, Regular Exercise, and Sanitary Surroundings Necessary

Experienced horsemen tell us that the greatest mortality in foals occurs in a season following a severe winter in which brood mares have had but limited outdoor exercise. If this statement is true, the heavy snowfall of the past winter will have the effect of reducing the percentage of live foals this spring. In view of these circumstances the results of the foaling season of 1916 will be followed with interest by horse breeders generally.

The upward trend of horse prices during recent months will convince many breeders that the colt crop this year is worthy of some attention. That these prices cannot logically fall to the level of those prevailing in 1914 and 1915 is maintained by all authorities who have studied the effect of the war on the horse industry. A few remarks, therefore, on the care and attention necessary in saving the life of the foal would seem timely.

In the management of the pregnant or "in foal" mare, the essential consideration is to secure a state of health and condition conducive to the well being and profitable utilization of herself and offspring. Thus the mare must safely carry the foal throughout the required period of gestation until it is born, and the foal must then be safely preserved during the earlier periods of its new existence.

The average period of pregnancy in the mare is eleven months. Some mares normally exceed that period by two or three weeks. The foal that is born at a period of two or three weeks less than eleven months is, on its arrival, often weak and lacking in vitality.

Throughout the period of pregnancy there is ever present the possibility of influences intervening which may produce abortion. By abortion is meant the premature expulsion or delivery of the foal, and at a stage which it has not attained sufficient development to live external to its parent. It is generally admitted that with some mares there is apparently a special predisposition to premature delivery, and with them a very trifling cause may make them abort or cast the foal before the proper time.

It is important that in-foal mares be given regular, moderate exercise up to the time of foaling. This does not mean overheating, overdrawing, or overexertion of any kind. Regular work in the field is ideal exercise for the brood mare.

Some preparation is necessary to insure the safe arrival of the foal. This consists in placing the mare in a clean, roomy, well-bedded box stall. During partuition, and for a week fellowing, it is extremely important that the mare and foal be given perfectly sanitary surroundings. Mares should be closely watched for commencement of partuition. Although a mare may have given normal birth to several foals, this is no assurance that abnormal conditions will not arise. If all conditions are normal, only a few minutes will expire from the time the water sack makes its appearance until the foal arrives; consequently if there is any great delay assistance is required.

The first step is to make an examination, and relieve the cause of obstruction by placing the head and feet in a natural position for delivery. If hind feet are being presented first, assistance is required to see that foal is properly placed. This is accomplished by bringing out hind feet and lifting stifle of foal well over plevic bones of mare. This will turn the foal with its back upward, and delivery should be accomplished in time to save life of the foal.

Cases of Emergency

All foals are nourished while in the uterus by a process of absorption through the afterbirth, which covers the internal surface of the uterus. When contraction or pains of labor take place, it naturally follows that the afterbirth becomes detached, and the foal's supply of nourishment of both oxygen and blood supply is cut off. The foal must necessarily perish if not delivered in a short time. In ordinary cases, about thirty minutes

(Continued on page 578)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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JUNE 6, 1916

DATES OF ISSUE.

June 20
July .....11—25
August ..... 8—29
September .....12—26
October .....10—24
November ..... 7—21
December ..... 5—19

MAKE THE BEST OF EVERYTHING

If you cannot get the choicest seed, make the best of what you can get, and soon your crop will be better than ever.

You may not have the best cow in the world, still, if she is the best you can get, bring out the very best there is in her by good feed and care. She will help you to earn money to buy the better cow you want.

Money may be scarce; it often is in the spring of the year. Make every cent go just as far as you possibly can. That is the way to make two cents grow where there was only one before.

Make the best of the old plow, the old harrow, and the old mower, and keep your eye out for better ones, bought with the money these well-worn tools make for you.

But don't be satisfied with the things which are not the best of their kind. The best farming is done with the most up-to-date tools, the choicest seed, the finest cows.

In every situation, under every circumstance, make the best of present conditions and work steadily toward the very best. Nothing can beat the man who does that.

THE PSALMS OF A FARMER

Teaching Love of the Soil

* * *

Bert Morehouse

* * *

1. So long as my tongue liveth, I will declare my love of the soil;
   I will declare my delight unto my brethren;
   In the midst of the assembly will I speak of it.

2. Everywhere I will preach the gospel of the soil,
   That men may not forget their nativity.

3. Ye of the city, climb to your housetops in the cool of the evening,
   When the winds of the country, carrying the sweet scent of the soil upon the wings of the night, drift in from the arable fields,
   And let your souls taste the life of it.

4. And all ye backsliders, born of he soil,
   Ye who have turned your backs upon your priceless heritage,
   Why harden ye your hearts against returning to plenteous independence,
   Where each day bringeth forth a new vision,
   And each evening addeth a new peace?

5. O ye farmers, fathers of children, teach them to love the soil that gave them birth,
   By making their tasks interesting and stepping stones to visions of larger things agriculturally.

6. Provide for them home entertainment;
   Be companions of your children;
   For they must play as well as work.

7. Therefore teach them the joy of farming,
   And they will teach it to their children,
   And to their children's children.

A RISE IN OIL

D. A. McCombe, writing in a recent number of a New England exchange, relates the following incident, which conveys a moral re the care of machinery of all kinds which each and every reader should heed:

"A few days ago I found my neighbor in the shed back of his house in the act of paying an enormous price for the lack of a spoonful of oil.

"'What are you doing, Morg?' I asked, as I surveyed his automobile engine in pieces scattered all over the floor.

"'I burned her out,' he answered, looking bored. 'I ran her about ten miles yesterday without quite oil enough. I saw she was getting hot, but thought she would stand it home. When I got in, one of the piston bearings on the engine was dry and so hot that the babbitt was melted clean out.'

"Morgan is more fortunate than some of us. He is machinist enough to repair his auto. He first called up a garage, and they wanted $25 for the job. That he wouldn't stand, so I found him in overalls with sleeves rolled up and at it himself. Besides a day of hard, dirty work, and some money for babbit metal, he was out the use of his machine and time—and all for the lack of a few drops of oil to supply the urgent needs of his machine.

"He acknowledged that he had been not only thoughtless about the use of oil, but that he had been using a cheap grade, and then he added:

"'I've quit cheap oil, and from now on I am going to use the best and plenty of it.'

"It is well to keep in mind that what will work on the automobile will also apply to many other things on the farm. The best oil is always cheaper than machinery."

* * *

Bust distrust and how business will boom!

* * *

To get along withour hurrying, begin sooner.

* * *

When a boy is permitted to go wrong the nation loses a good citizen.

* * *

The true measure of a man is the use he makes of his own opportunities.

* * *

The under dog gets a lot of sympathy, but what he wants is help.

* * *

Preparedness on the farm consists in having everything ready before the job starts.

* * *

The road that leads to success is paved with stepping stones.

* * *

Weigh your words, and give such good measure that you won't have to use many of them.

* * *

No man is ever rich enough to be idle. Indolence is a greater sin among the rich than the poor.

* * *

Keep the garden busy by planting a second crop as soon as, or maybe before, the first crop is gathered. A plot of ground 25 x 75 feet in size will grow enough vegetables for a small family.

* * *

If a tool or implement is worth borrowing, it is worth taking home in just as good condition as it was when it was borrowed.

* * *

Breed and feed more and better stock. It will pay well so to do. Looked at from every angle, with due allowance for all possible contingencies, our judgment is that live stock will be profitable for 1916 and for years to come. Cattle, cows, sheep, hogs, horses all have fine prospects. Tie to good stock—you will never regret it.

* * *

Beware of flies, mosquitoes, all vermin. Keep them off yourself and your food. They are disease conveyors. Low ground fed by summer rains will breed mosquitoes by the billion. A little kerosene oil poured on such waters forms a film that prevents the young mosquitoes from getting out and kills them. A few cents' worth of oil thus used now may insure comfort to man and beast

* * *

We often wonder if farmers generally know what a store of useful information the advertisers in farm papers have on hand, ready to give out to those who ask? Send for some of the free literature on the subjects in which you are, or should be, interested. When you know something about a thing you are ready to decide whether you want to know more about it.

* * *

Nagging is a particularly bad habit—about the worst any one can have. It has started more people on the downward path than any other evil. It is at the root of more troubles than any other one cause that could be named. It does incalculable harm and never does any good. It debases the nagger and drives to desperation the nagged. Why, therefore, nag?

Features Gathered From the N. B. Women's Institute Reports

(Continued from last issue)

Hammond and Markhamville.—Since report of last year, this branch has grown in strength and purpose. Past year has been one of activity for every member, and as a result extensive repairs have been put on the Markhamville school buildings and Hammond public hall. Membership 26, average attendance 15. Programme of regular meeting generally consists of two papers and anything else that may come to hand. The method of choosing a committee to make out the programme for six months at a time has proven very successful. Sewing circle still continues, and many a lesson learned by seeing each other's handiwork. Another active member had the misfortune to lose her home and contents by fire, and the Institute remembered her with a donation. Patriotically, $10.25 was given to the Ambulance Fund, a well-filled box to the Belgians, and a few knitted articles to the soldiers. Funds have been raised by selling patriotic buttons, a Bean Supper, and a Concert and Pie Social. With permission from the Supervisor, this branch organized an Institute at Poodiac.

Havelock.—First started in 1912 and has steadily grown not only in members but in the sphere of its helpfulness to the community. Since the war it has enlarged the field of its endeavors to the outside world also. Printed programmes so satisfactory the old, haphazard method of preparing from month to month will never be adopted again. Four committees of three members each were selected to repare the programme, and each committee had a period of three months allotted to it. Programmes are well thought out and well balanced, consisting usually of roll call answered in various ways, Current Events, Question Box, a Discussion or a Debate or a Paper, and a demonstration which usually ends in the serving of a delicious lunch, when nourishment for body as well as mind is given. Two meetings a year are set aside as public meetings and this year they were of a patriotic nature, one taking the form of a recruiting meeting, when two young men enlisted. Much interest manifested in lighting the streets of the village, but so much money was needed for patriotic work it was thought advisable to purchase one light only, and this for a particularly dark corner. Money has been raised in the following ways: Collected for Hospital Ship Fund, $32.30; proceeds from two ice cream socials, $12.27; collection taken at public patriotic meetings, $71.92; Sock Social Tea, $11.00; sale of "Allied for Right" buttons, $10.00; sale of tags at local exhibition, $30.00. This gave a total of $261.49, which was expended as follows: Hospital Ship Fund, $32.30; cost of street lamp, $7.62; paid to Ambulance Fund, $9.00; paid to South Centre Rifle Club, Toronto, socks for soldiers, $10.00; materials to sew and knit, $99.06; bed in hospital in France, $80.92. At two different times large quantities of clothing were sent to the Belgians, and to date 48 pairs of socks knitted. Membership, 34.

Lower Millstream.—Organized in 1911. Membership grown from 12 to 40, with an average attendance of 23. Last year programmes printed in the form of a wall card, and one copy placed in each home in the community. Economizing this year and using the typewritten programme. Subjects for each meeting vary, as what would interest one would not interest another. Roll call answered with Patriotic, New Year's, and Christmas quotations, also "What we should remember," "Dont's," and "Conundrums." During the year $45.00 has been raised and $40.00 expended. The sum of $2.00 was spent on a Clam Supper, $9.00 for a Circulating Library, $11.00 to the Home Relief Fund, $5.00 to the Ambulance Fund, and $5.00 to a Red Cross Society. Not specializing in Red Cross work, as a Red Cross Society is in existence. Three boxes of clothing have been sent to the Belgians. Institute has been the means of developing latent talent. One woman freely admits that the Institute has made a new woman of her. Whereas four years ago she hardly thought it possible to write a paper, today she is considered one of the most capable women in the Institute. And as woman is a controlling element in each home, and the homes make up the country, any improvement in one means an improvement in the other, so we feel we are following our motto —"For Home and Country."

Newtown and Smith's Creek.—During the last year 12 meetings have been held, with an average attendance of 14 members. Membership 26. Members much interested in Red Cross work. The sum of $18.00 was collected for Hospital Ship Fund, $63.15 for Belgian Relief Fund, and $11.00 worth of clothing sent to the Belgians. In order to contribute to the Motor Ambulance Fund patriotic buttons were sold and $10.00 made. Some of the most helpful papers for programme work have been "Uses of Salt," "Life's Worries," "Lessons of Life from Weeds," "Economy in Dress," "The Care of Cup Towels," "Home Sewing," and "What are the Qualities to Insure Success at Any Business?"

Penobsquis.—Organized in August, 1914, with a membership of 12, which has since increased to 18. Average attendance of 18 members and usually two or three visitors. Adopted the plan of answering roll call with quotations. Memories very poor at first, but a fine of five cents imposed every time a member merely answered with a feeble "Yes" soon developed excellent memories. A committee was appointed to arrange a programme for the year, when one paper a month was allotted to different members, also a "discussion question" was down for each meeting. If a member failed to give a promised paper she was fined 25 cents. Some papers included "The True Spirit of Christmas," "Friendship and Sociability," "How to Make the Home Cheerful and Attractive," "Self Control," "Mother's Duty to Her Child," and "Girls' Home Duties." The discussion papers were "Preparation of Winter Vegetables," "Value of Women's Institutes," "Saving Steps," and "Current Events." Money has been raised in such ways as $31.25 collected for Hospital Ship Fund; $65.75 raised from a Pie and Basket Social to buy flour and beans for the Belgians; $18.65 realized from an apron and necktie sale and bean supper for purchasing material to be made up for the soldiers; $5.00 from the sale of "Allied for Right" buttons for the Motor Ambulance Fund. So far 76 articles, including socks and hospital supplies, have been sent to headquarters.

Sussex.—The year just closed has been one of steady growth and progress. The meetings have been well attended, programmes helpful, and since last convention membership has been doubled. The outstanding feature of the year's work has been patriotic efforts. At the August meeting, immediately after the outbreak of war, a committee was appointed to have charge of the patriotic work of the Institute, and their first work was to make a thorough canvas of the women of the community in behalf of the Hospital Ship Fund, the sum of $163.45 being collected. Next undertaking was "Button Day," when by sale of "Allied for Right" buttons $105 was forwarded to Miss Winter for the Ambulance Fund. A "Self-Denial Day" for suffering Belgium was a fitting climax for a good year's work $386.39 being realized. Thus through the year has passed through the hands of the committee $654.84. At the present time they are preparing for a Patriatic Fair. Taking as a nucleus the fancy work and canned goods exhibited by the Institute at Fredericton, they are asking for donations from all the people of the town and vicinity. They will charge a small admission fee, have a lunch counter, a candy booth, a table of cooked food for sale, and a miscellaneous assortment. Anything remaining at the close of the evening sale will be sold at auction. Already many practical demonstrations have been given in the Household Science room in the Dairy School, and others have been planned for the near future.

Blackville.—Since August, 1914, the meetings have been held in a room of the old school building which was secured for the purpose by paying a small rent. At the expense of the Institute, it was fitted up with tables, chairs, blinds, lamps, etc. A second-hand organ was bought. The building is situated in about the middle of the village and is admirably suited for Institute meetings, especially since taking up Red Cross work. Through the medium of an energetic Red Cross committee 1,062 articles, including Red Cross supplies and comforts for the soldiers, have been shipped to proper authorities. Also, a large box of second-hand clothing was sent to the Belgians. The Red Cross committee planned for fortnightly meetings during the winter months and weekly meetings during the summer months. These meetings have been very much enjoyed by all. While the older members knit and cut out garments the younger members wound yarn, made face cloths, mouth wipes, handkerchiefs, and tore and rolled bandages. The sum of $303.33 has been raised and collected during the past Institute year. Of this money, $60.00 was sent to the Hospital Ship Fund, $100.00 to the Belgian Relief Fund, $56.50 to the Ambulance Fund. The "Tag Dag" held in July was very successful, $69.66 having been raised. During the year addresses were given by Rev. L. Beaton on "The Cigarette Evil," by Rev. Mr. Dunlop on "Boys in the Home," and Rev. H. T. Montgomery on "The War."

Centre Napan.—Enrollment 49, with an average attendance of 20. Each member responds to roll call with a quotation. The printed programme scheme for the year 1915-16 has been successfully carried out. Edifying subjects have been discussed, debated upon, and many instructive papers read by the members. A few of the subjects to be taken up for study this winter are "Notable Women of Canada," "Value of Self Control," "Home Management," "Value of Cheerfulness," "Girls' Influence in the Community," "Books We Should Read." During the past winter an evening a week was devoted to Red Cross work. Each member was taxed five cents—our homes thrown open to all in the community who wished to attend and bring with them the minimum fee (five cents). In this way the sum of $24.21 was raised, with which material to make pillow slips and shirts, and to knit socks, scarfs, and mittens was purchased. Money amounting to $88.50 was raised for Belgian Relief and Red Cross work and through the sale of "Allied for Right" buttons $54.50 was given to the Ambulance Fund. The sum of $57.30 was expended on the Agricultural Hall, where the society meeting are held. The women of the community were instrumental in having this hall erected in 1912, and the above sum expended closes the debt. Receipts for the year amount to $225.34 and expenditure $205.04. As a body we feel that our Institute has done much for us in broadening thoughts, expanding our ideas, and giving us fuller intercourse with the intelligent and industrious people of our community.

Millerton.—Last convention membership was 22, now it is 35. Meetings are held at the homes of the members, but in the spring this branch hopes to secure the use of the schoolhouse, as many of the houses seem too small to accommodate the large number of members and visitors attending the meetings. During past months many entertaining and helpful subjects have been discussed. A trained nurse, with many years' experience, gave some splendid information on "Home Nursing." At another meeting the subject was in the form of a "Question Box." Each member was allowed to ask a question on any subject; thus the programme varied and at the same time was highly instructive. Over $200.00 has been raised for patriotic purposes, the bulk of it being used to purchase Red Cross materials and yarn. One of the methods by which money was raised was a drama; another an ice cream and cake social, and another by levying a small tax on the members. Altogether 432 articles have been shipped to the soldiers and hospitals. Members of the 28th Battery, while passing through Millerton to Valcartier, were presented with boxes of "eats" by this Institute. At roll call each member answers with a useful hint or quotation. An "Entertainment Committee" was appointed, and at each meeting 15 or 20 minutes are devoted to singing and instrumental music. Refreshments are also served.

Newcastle.—Organized June, 1915, with 8 members. Monthly meetings and several special meeings have been held, and the membership is now 30. This branch plans having a series of cooking lessons this winter, each member furnishing materials and utensils for one, and the department supplying the teacher. Members not doing patriotic work under the auspices of the Institute, as they all belong to the eRd Cross Society organized at Newcastle. The Women's Institute in Newcastle has become a permanent institution productive of much good.

THE WOMANLY WOMAN

Today there exists, as there always will exist, a woman who is striving to reach the highest pinnacle of success as a home maker She has never wavered from her true course of duty or swerved in life's purpose and plan. She is not a myth, this little womanly woman, but she is as actual and as real today as she ever was. She is the woman whom we are willing to trust with the welfare of the nation, for she has not run after false gods, or been lured by the siren voice of the outside world, but she has gone back to nature and has listened to the call of a man and the voices of little children, and she admits that there is nothing as satisfying or worth while, in the whole wide world, as the making the home and rearing of children.

HORTICULTURE.

FRUIT PROBLEMS WORTH STUDYING

Some of the most valuable work ever attempted in this country to determine the value of mulching and fertilizing for apple trees has been carried on, for many years, by Prof. J. P. Stewart, of the Pennsylvania Agricultural College. While others have been attempting comparative experiments on a few acres, or, as is the case in Maine, for a short period, the work here outlined covers nine years and two or three hundred orchards all over the state, started under varying conditions and set on all kinds of soil. It is the thoroughness of the work done which commends it to the orchardists of Maine. Nowhere else do we find the same valuable data, and the careful reading of the article is urged, as well as the trying out of the system on New England orchards. Something is wrong with the apple industry here, and we get but little help at home. Apples are uneven in size and wanting in color, two very important conditions, when we go into the market to compete with western fruit. We must improve in these two essentials, as well as give careful attention to spraying. The conclusions reached by local theorists is that fertilization is not to be endorsed, yet the trial has been made on a very small area and not on the varying conditions of soil found in the orchards of the state. We face serious complications where the industry is to be tested as it has not been in the past. Greater uniformity in size, more color, and increased yield per tree constitute the problems facing the grower of this state, and with these there goes another of special importance—the improving of conditions by such means as will increase yield and the net profit per barrel grown. There is no question about the benefits of cultivation, but the farmer must know that it will pay him more per barrel than any other system before he can afford to commit himself to the practice. The illustrations here presented tell their own story, and the careful reading of the text will bring home the lesson of greatest possible importance to the grower. The Farmer is under obligations to the Pennsylvania Farmer for the text of Prof. Stewart's clear setting forth.

He says:

It is the wide dupication of the experiments, over a great variety of soils and conditions, that has enabled us to secure definite and positive results, where so many others have failed.

When these experiments were started in 1907, there was a great deal of doubt and uncertainty as to the value of fertilization in orchards, especially with commercial materials. The idea was becoming established, even among earnest and efficient horticulturists, that trees were different from other plants, that their wide root range, long growing season, biennial bearing habits, and generally hardy nature made them indifferent to the usual need of other crop plants for at least occasional assistance in the matter of additional plant food. This impression also is undoubtedly correct in part—a fact which makes fruit and nut production so well adapted to many of the eastern and southern soils. But even trees will not run along indefinitely and maintain their best growth and production without some assistance of the right sort and at the right times.

These facts have been abundantly demonstrated in Pennsylvania group of experiments. In one case, for example, the unfertilized trees have averaged from 78 to 85 bushels per acre annually during the last five years, while the adjacent trees receiving the proper fertilization have averaged 180 to 216 bushels. These trees, moreover, were relatively young, the above yields being produced in their tenth to fourteenth years. In more mature trees the annual net gains from fertilization have ranged from 150 to 325 bushels per acre on the average for a period of seven years. In the latter case the best of the unfertilized trees have averaged a trifle over 208 bushels per acre.

It must not be supposed, however, that such gains as these can be secured in every orchard. In some cases the yields are being retared by other conditions, such as a deficient moisture supply, a frosty or otherwise improper location, poor spraying, or too much pruning. These difficulties naturally can only be remedied by proper attention to them. But after these actors have received the proper attention, or wherever they seem to be satisfactory already, and the trees are still below normal in growth and bearing, it is quite likely that fertilization of the right sort is the most important need.

What Fertilizers Are Needed?

Assuming, then, that we have an orchard in which the growth, fruiting, and other general conditions indicate the need of fertilization, the next matter of importance is to make sure that one is using the right materials. The only certain method of doing this is to run a little test of he sort described later, but in he meantime, in the light of all our experiments, we may say that in the average orchard potash is needed least often and nitrogen most often. This incidentally happens to be a fortunate condition just at present in view of the fertilizer market.

Phosphorus by itself has given no benefits, although applied in four experiments and over a five-year period. When added to nitrogen, however, this combination has generally resulted in greater benefits than any other fertilizer treatment, not even excepting the combination of all three materials. This does not mean that potash is never required by trees, as we have one important experiment in which it is still proving to be the leading element. It does mean, however, that in most cases proper additions of nitrogen and phosphorus are all that is needed to supplement the present resources of the soil. The caustic action of the sodium in nitrate of soda and that of the gypsum in the acid phosphate are doubtless influential in bringing about this effect.

How Much to Apply

As to quantity of materials, an application of 25 to 30 pounds of nitrogen, at least half of which is carried in nitrate of soda, and about 50 pounds of phosphoric acid, carried perhaps preferably in acid phosphate, is usually sufficient for an acre of bearing trees. Two applications of nitrate of soda, of 100 pounds each, preferably applied about a month apart, would furnish the nitrogen; or a slower acting carrier, such as dried blood, could be used for about half of this element, and then apply it all at once. The former method is usually cheaper and also more effective, especially when used as a top dressing. The phosphorus can be carried in about 300 to 350 pounds of acid phosphate, or in equivalent amounts of ground bone, floats, or basic slag. If potash is available and thought to be needed, an application of 30 to 50 pounds of the high-grade muriate, or its equivalent, is likely to be enough.

The nitrogen may be obtained wholly or partially by the use of stable manure or leguminous plants if they are available. In the Pennsylvania experiments, however, the artificial applications of nitrogen have usually been much more effective than those obtained by the use of leguminous cover crops. This may be accounted for by the probability that the reduction in moisture, occasioned by the growth of the cover crops, apparently neutralizes the benefits which should be secured from the additional nitrogen fixed by the cover crops. This effect, however, may not be observed in all soils, and is less apparent in seasons of abundant rainfall.

Stable manure at the rate of about eight tons per acre annually is generally advisable, although it is much slower acting than commercial nitrate applications—often requiring a year longer for important results. A good mulch of manure, however, is one of the best treatments that can be applied to a young apple tree. It has also been most efficient in increasing the average size of the fruit in bearing trees.

None of the fertilizers has materially improved the color of the fruit, and those containing nitrogen have generally reduced it, as compared with the checks at any given date. This is simply due to delayed maturity, which is often an advantage with the varieties of more northern origin, such as Baldwin, Hubbardston, McIntosh, etc., and it is readily overcome in them by delaying the picking. With varieties requiring a longer growing season, however, such as the York Imperial, it may also be necessary to utilize other aids to color, of which the most important are open pruning and sod culture, in order to overcome the ill effects of nitrogen on color.

Time and Method of Application

The time of application is important, especially in the case of nitrates. Present evidence indicates that these materials may often be applied too early in the season. Furthermore, there is evidence which leads to the opinion that distinct harm may result from their application at fruitlsetting time, especially in the case of the peach. It seems, therefore, that for apples the nitrates hould be applied not earlier than bud-opening time, and probably not later than the middle of June. In general, the middle of this period should do very well, although some of our most striking results have come from applications made as late as the 8th of July.

Manure or other organic carriers of nitrogen may be applied at any time from early spring to the middle of June without danger of material loss or ill effect. The time of application of the other ingredients of the general fertilizer suggested is much less important, hence they may be applied with the carrier of the nitrogen.

By postponing the application of fertilizers until after the fruit has set, an opportunity is given to vary the rate in accordance with the amount of fruit set on the trees If the crop is light, much smaller applications are required because of the natural tendency to develop a sufficient number of fruit buds in the off year. If the crop is heavy, the applications should be rather liberal in order to avoid, if possible, the total failure of the crop the following year, and ultimately to steady the yields. This plan should save considerable outlay in a series of years, and should also enable one to secure the greatest possible return for the fertilizers applied.

The method of application followed is that of scattering the fertilizer or manure broadcast over the surface of the soil, care being taken to keep it at some distance from the tree trunk, where there are few absorbent roots, and to extend the applications well beyond the spread of the branches. The application should be heaviest under the outer two-thirds of the spread of the branches, and it may either be left on the surface to be washed in by the rains, or it may be harrowed or lightly plowed into the soil. After all is done, it should be remembered that as a rule the fertilizer applied in any given season cannot matterially affect the yield of the year in which it is applied, since the fruit buds are formed in the latter part of the preceding season. No important results, therefore, should be expected before the following season at the earliest, and if other conditions are not satisfactory the results may not appear until considerably later.

Adjusting the Fertilizer to Local Needs

Wherever the orchard interests are large, it is advisable to accompany the use of the general fertilizer suggested with a local test in order to determine the exact needs of the particular orchard involved. Such tests will enable the grower to modify the more general formula so as to give the best possible net results.

Plan for Local Orchard Fertilizer Test

(Pounds of Fertilizer for a Mature Tree in Bearing)

1. Unfertilized plot.
2. Nitrate 2 lbs.; dried blood 3 lbs.; acid phosphate 10 lbs.
3. Nitrate 2 lbs; dried blood 3 lbs.; potash 2 lbs.
4. Acid phosphate 10 lbs.; potash 2 lbs.
5. Unfertilized plot.
6. Nitrate 2 lbs.; dried blood 3 lbs.; acid phosphate 10 lbs.; potash 2 lbs.
7. Same as No. 6, plus lime, 12 to 25 lbs.
8. Manure 400 lbs.
9. Unfertilized plot.

The plots selected for this test should be located in a typical part of the orchard, and should include at least six average trees, of the same variety and age, in each treatment. If possible the plots should be laid out in double rows of three trees each, and if two or more varieties are involved, each plot should be arranged to include equal number of each variety. All trees should be labeled and carefully measured at a fixed point on the trunk, and definite records of their yields and growth should be kept for at least three years. Frequently

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good indications of the needs of an orchard may be obtained in much less time, especially if the need is great, but this period should be allowed, and a longer one should be used if necessary.

The materials for this test are indicated in the proper quantities for each bearing tree instead of in amounts per acre as above, and in both cases proportionate reductions should be made for younger trees. In other words, if ony one-third of the amount of fertilizers recommended should be used, so that the rate of application may be kept within proper bounds. The careful operation of this test for the period suggested should readily determine if fertilization really pays, and which of the principal fertilizer elements is the most needed in any particular orchard. —Maine Farmer.

TWIG BLIGHT ON APPLES

Last year Twig Blight (Bacillus amylovorus) was very prominent on the apple trees throughout the state. This was perhaps due, to a large extent, to the peculiar spring conditions.

Twig Blight, also called Fire Blight, or Blossom Blight, is a bacterial disease, and usually enters through the flowers or through a bruised portion of the stems or leaves. Trees which have abnormal growths, such as water sprouts, or on the other hand, very slow-growing stems, seem to be attacked more readily than healthy, normal trees.

Soon after the tree becomes infested the tip leaves on many of the twigs take on a yellowish appearance. These later turn to a dark brown color and shrink up. A little later the whole spur dries up and dies. As a rule, many of the twigs on the trees are infected; this gives the tree the appearance of being fire swept. Fruit on infected branches takes a yellowish, shriveled appearance, and later dries up.

The disease is transmitted by means of germs These may be carried by the wind, by insects, or by the diseased portion coming in contact with healthy branches.

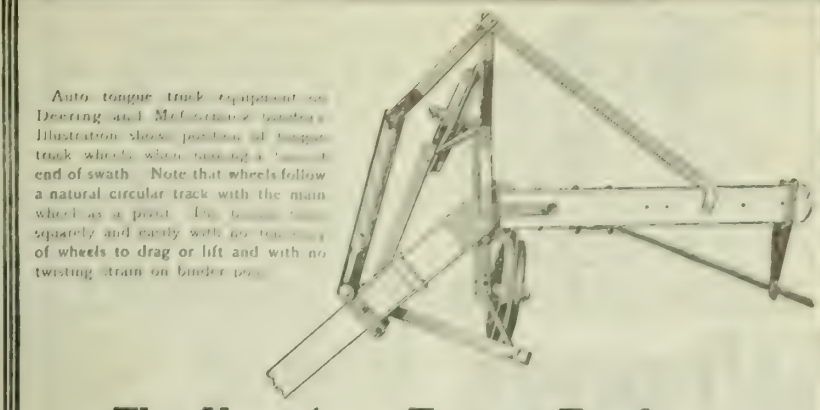
The damage done by the disease is mainly in preventing the setting of fruit. In some cases branches are killed, and in extreme cases the whole tree is killed.

To destroy the disease, all the infected portions should be pruned off as soon as possible after they appear. Each cut should be made several inches below the diseased portion. After each cut the instrument should be disinfected by dipping it into a pail of corrosive sublimate (bichloride of mercury), 1-1000 solution. This prevents the carrying of the germs by the instrument. All the cut branches should be removed from the orchard as soon as possible, and burned, to prevent the disease spreading from this source.

The disease, in some cases, forms Holdover Blight, or Canker Blight, and it is in this stage that it remains dormant during the winter, to break out again in the spring as Twig Blight.

The Holdover Blight, or Canker Blight, is formed on the branches or trunk, but more often in a crotch of two branches. It is darker than the surrounding wood, and has a shriveled, cracked appearance. This can be killed to a certain extent by cutting out all of the diseased portion and then washing the wound with corrosive sublimate (1-1000 solution).

These cankers can be cut out during the winter pruning.—E. F. McKune, Colorado Agricultural College, Fort Collins, Colorado.



Auto tongue truck equipment on Deering and McCormick binders. Illustration shows position of tongue truck wheels when turning a short end of swath. Note that wheels follow a natural circular track with the main wheel as a pivot. Enables binder to cut squarely and easily with no raising of wheels to drag or lift and with no twisting strain on binder pole.

The New Auto Tongue Truck on Deering and McCormick Binders

THE announcement of a new auto tongue truck on Deering and McCormick grain binders this year is great news for Canadian farmers. It means less work and less expense for them at harvest time.

With this new auto tongue truck the binder pole is held in line with the truck pole. An 8-foot binder enters the grain and continues to cut as squarely as a 6-foot machine.

Equipped with this auto tongue truck, the binder cuts a full 8-foot swath without crowding the horses into the grain—a gain in the width of every swath, with far less work for the driver.

Auto tongue truck wheels are fitted with removable dust proof bushings, equipped with hard oil cups. When a bushing wears out, you put in a new one instead of throwing the whole wheel away.

This new tongue truck is one of the most important improvements made on binders in the last ten years. Do not fail to see it at the local agent's place of business next time you are in town, or write us at the nearest branch house for details.

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MIXING VARIOUS INSECTICIDES

Now that one has to fight the codling moth, the San Jose scale, canker worm, plant lice, and other insects, besides the apple scab and other fungous diseases, it is advisable to apply two or three materials at the same time. Certain materials can be mixed together with safety, while others in combinations either lose their efficiency, due to chemical changes, or they may prove injurious to the tree. It is important, therefore, to know what ones can be mixed safely. The following list has been prepared at the New York station:

Better results are obtained by mixing paris green or arsenate of lead with bordeaux mixture than by applying them separately.

Properties are not changed by mixing lead with tobacco or bordeaux, lime sulphur with tobacco, soap with tobacco or emulsions.

Efficient and non-injurious are lead with lime sulphur, soap with tobacco.

Inefficient but non-injurious, are lime sulphur with soap, acids or emulsions.

Safe and efficient triple combinations are lime sulphur, lead, and tobacco; bordeaux, lead, and tobacco.

Dangerous combinations are paris green with lime sulphur, soaps, or emulsions; arsenate of lead with soaps, emulsions, or alkalies; emulsions with lime sulphur, zinc arsenite, or arsenite of lime with lime sulphur, soaps, or emulsions; arsenate of lead or paris green with soda or potash sulphides, soaps or emulsions.

FOR GARNISHING DISHES

Parseley, as every cook knows, is almost indispensable as a flavoring for soups and sauces, as well as for garnishing meats, fish, and salad dishes. But what every one does not know is that parsley may be wintered over indoors and thus be made to do duty all the year around. For this purpose the best way is to start the plants in open ground in early fall, and on the approach of cold weather transfer to a light kitchen or cellar window. The seed may be started in the house, but it germinates somewhat slowly, and the plants are feeble at first. Use a rich loam, and keep moist, but not too much so. There are several varieties of parsley, which may be looked up in any seed catalog.

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.
If you, my sister are [illegible] health, and feel unfit for household duties social pleasures, or [illegible] just how you suffer, and let me send you free and prepaid a trial of a **home treatment** suited to your needs; with references to [illegible] how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, your mother, your sister, your daughter, or your mother-in-law. I want to tell you how you can cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience**, we know better than any doctor; and thousands have proved that there is hope even for the hopeless in my method. If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, **falling or displacement of internal organs, ladder irritation with frequent urination, obstinate constipation or piles, pain in the side, irregularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send today for my complete ten days' treatment free and **postpaid**, to prove to yourself that these ailments may be cured at your own home, without the expense of hospital treatment. In the hospitals of America everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured**, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all—young or old. Mothers, Daughters, I will explain a simple home treatment which speedily and effectually checks excessive drains (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with your work. **Is health worth asking for?** Then accept my generous offer. Write for the free treatment and to you needs, and I will send it in plain wrapper by return mail. Don't send a penny; just send this offer, mark the places that tell your feelings, and return to me. **Write and ask for the free treatment to-day**, as you may not see this offer again. Address:

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MILK FEVER CHIEFLY ATTACKS COWS OF THE DEEP MILKING STRAINS

Milk fever, also known as parturient apoplexy, not only is peculiar to the cow, but attacks only cows of the improved breeds and of deep milking strains. It chiefly affects cows that have been developed in the direction of early maturity, rapid fattening, or a heavy production of milk. The victims are not always fat when attacked, but they are cows with great powers of digestion and which have been fed heavily previous to the onset of the disease. Cows are seldom affected until they have reached full maturity and are at the most productive period of their lives—that is, from five to eight years of age.

In heavy-milking cows all the food eaten in excess of that required to make up for the normal waste of the system is turned into milk. When the flow of milk ceases, if the animal is fed heavily the excess of nutriment from the food has no avenue of escape, and is consequently stored up in the glands and in the blood, causing the animal to become unnaturally plethoric, or affected by excessive nutrition. After the delivery of the calf the blood which has been supplying the fetus is suddenly turned into the circulation of the mother, and if she does not begin the secretion of milk promptly the plethora of her blood rapidly increases.

Symptoms of Disease

The disease usually manifests itself within two days after the birth of the calf, although in rare instances the cow becomes affected prior to parturition. Great uneasiness is one of the first noticeable symptoms. The cow steps about restlessly and refuses to eat or drink. She may soon begin to show signs of abdominal pain. Paralysis begins to be manifested within a few hours, being indicated by a staggering, uncertain gait. The patient now become quieter, rapidly weakens, and finally goes down and is unable to rise. The head is drawn around to one side, usually the left, producing an attitude that is not often seen in any other disease. The animal soon becomes quite unconscious.

The temperature, at first elevated, tends to become lower as stupor and coma progress. The bowels may become torpid or completely paralyzed, and unless improvement is brought about they are not likely to operate again. The bladder, too, is paralyzed and fails to expel its contents. Action of either bowels or bladder, or both, is always a favorable symptom.

The torpor of the digestive organs nearly always causes grave disorders; the paunch becomes the seat of fermentation, producing gas and excessive bloating. There are frequent belchings of gas or food, which, reaching the paralyzed throat, pass in part into the windpipe, causing inflammation of the air passages and lungs, which condition often becomes the immediate cause of death.

Means of Prevention

For such a serious disease prevention is more important than treatment. Among the most effective means of prevention may be mentioned a restricted diet for a week or two before calving and for at least four days afterward. Free access to salt and water is important, as the water serves to dilute the dense, rich blood, and salt encourages the animal to drink. The water should be warmed suitably, as iced water may have a bad effect.

A cow that is in a very plethoric state, or that was attacked by milk fever at her las parturition, should be given a purgative dose (one pound) of epsom salts twelve to twenty-four hours before parturition is due. A most important precaution in a plethoric cow is to avoid drawing any milk from the udder for twelve to twenty-four hours after parturition. Daily exercise is of importance, and the value of the open air cannot be overestimated. Rich clover pastures should be avoided.

Method of Treatment

It is a good practice to give a dose of purgative medicine if the air treatment, to be recommended later, is not available. Epsom salts two pounds, carbonate of ammonia one-half ounce, nux vomica one-half dram, is a good preparation to use at this juncture. The bowels and bladder should be emptied, the former by hand and the latter by the use of a small rubber tube. Bags of ice may be applied to the head. Benefit is often derived from the administration of twenty drops of tincture of aconite every four hours. The application of water, as warm as it can be borne by the hand, to the back and loins acts by removing the blood pressure from the vital organs.

In view of the great superiority of the inflation of the udder with atmospheric air as a curative for milk fever, medicinal treatment is seldom attempted at the present time. By former methods of treatment the losses were very great; but by the use of the air treatment in skilful hands it is claimed that more than 96 per cent may be saved. A large syringe or injection pump is used (a pump for inflating bicycle tires serves the purpose nicely). The whole apparatus should be sterilized before it is used. Boiling for twenty minutes will afford suitable sterlization. The intake opening is filled with sterilized cotton, while a milking tube is attached to the delivering tube.

The teats of the cow should be carefully washed and dried, after which the milking tube on the pump or syringe is inserted into each in turn, while an assistant distends each quarter of the udder with air, without continuing the process after the udder is fully expanded. The tube is now withdrawn and a broad tape is tied around the free end of the teat to prevent the escape of the air. The tube should be disinfected by dipping in a 3 per cent solution of cresol compound or carbolic acid after each application. Should no indications of improvement be apparent at the end of two hours, the udder should be inflated again.

BUTTER MAKING

The question is frequently asked: "Which is the more profitable, making butter at home or selling cream to the creamery?" So many factors enter it that it is almost impossible to answer the question for all parties concerned. In general, when a uniform quality of butter can be produced and sold on a ready market at a fair price, and the

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making and maketing affords useful employment for members of the farmer's household, but does not inflict hardships on any of them, the making of butter at home is advisable. If, on the other hand, trouble is experienced in making a uniform quality of butter, if the butter must be sold at a comparatively low price at the local stores, if extra help must be hired in order to make and market the butter, or if these operations impose an unreasonable burden on any member of the farmer's family, it would be advisable for the farmer to allow the creamery to handle his product.

The manufacture of good dairy butter depends upon condition of cream, care of cream before churning, cleanliness of product and utensils, control of temperature, efficiency of churning, and working.

The process of making good butter of uniform quality really begins with the production of the milk. Milk from unhealthy cows can never be made into first-class products. Neither can cows that are kept in unclean or unsanitary places produce clean, wholesome milk. More depends on the care given the milk and cream before entering the churn than on the butter-making proper, although one must understand the principles before he can make good butter.

For the best quality of butter, a rich cream testing 30 to 35 per cent should be used. As soon as milk is separated the cream should be cooled immediately by placing cream in a deep, narrow pail or a shotgun can, and put this in cold water just pumped from the well, or by placing in a water tank. Warm cream should never be mixed with cold, as this causes souring in a very short time. The cream should be kept cool until a few hours before churning, when it should be taken out and allowed to sour naturally or by use of commercial starter. The best temperature for allowing this cream to sour is 70-80 F. When sufficient acid or sourness has developed, the cream is again cooled down to churning temperature. The proper amount of acidity depends upon the kind of cream, quality of butter desired, and churning temperature. As a rule, from 4 to 5 per cent acid is the desired amount.

The cream should be allowed to stand about two hours at churning temperature in order to have all fat globules at same temperature. For ordinary farm churning, a temperature from 60 to 75 degrees F. is best. Fresh cream should not be added for 12 hours before churning, as it will not churn out so thoroughly. The churning temperature is affected by season of the year, kind of feed given the cows, lactation period, condition of cream, and temperature of churning room.

If butter is to be colored, a desirable commercial butter color can be secured from any dairy supply house. Add this according to market, but usually about 2 oz. to 100 lbs. of butterfat. Color should be added to cream in churn just before starting to churn.

The churn will always do its best work when less than half full. The proper speed will depend upon size of churn and condition of the cream. The length of time necessary will vary, but ranging from 15 to 30 minutes.

Often in fall or early winter farmers experience difficult churnings, which are frequently caused by condition of cream from cow far advanced in lactation period, at which time the fat globules become smaller and harder, making it difficult to collect them into a mass of butter. Such difficulties can usually be overcome by ripening cream to higher acidity, churning at a higher temperature, and separating a thicker cream.

The churn should be stopped when the granules are about the size of wheat grain or split pea. When granules reach this size buttermilk is drawn off, allow to drain well, then wash with water at a temperature nearly the same as that of muttermilk or one to two degrees older, adding about the same amount as there was buttermilk; revolve churn 10 to 12 times at ordinary speed.

Salt may be added to butter in churn at the rate of one ounce to one pound of butter, or by placing butter on table or worker and working salt in with paddle or mechanical butter worker. It should be worked until salt is well distributed and butter is collected into a firm mass. When the butter has been sufficiently worked it should be printed into some desirable shape and size, depending upon market and amount made at each churning. Butter should not be stored for any length of time before delivery unless one has cold storage facilities.

Temperature, care, and cleanliness are three vital factors in good buttermaking; therefore it is absolutely necessary that maker should have a few dairy thermometers on hand and watch the temperature. Be sure and use plenty of hot water in cleaning utensils so as to remove all dirt and grease. All wooden utensils should be cooled with cold water before being used; otherwise butter will stick to sides.—J. F. Thomas.

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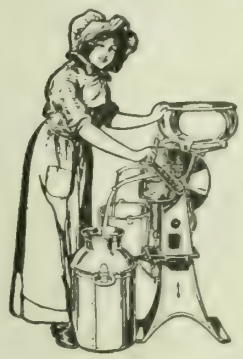

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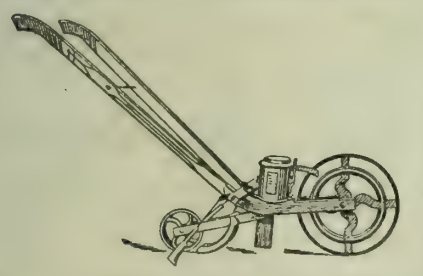

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SCOURS IN CALVES

It is well for the breeder to be on the lookout for one fo the most troublesome complaints of the young calf that he has to contend against.

The disease may appear at any time subsequent to birth. The sick calves appear dull, weak, have sunken eyes, and heavy breathing. The discharges from the bowels are of a yellowish white consistency and very offensive. The case will become aggravated, and if not checked death will occur in two or three days. It is very essential that the persons looking after them should be with the sick calves several times each day in order that the disease may not become serious before it is detected.

The Kentucky Experiment Station, which has done some excellent investigation work in the cause of farming science, has used the following drugs very successfully in the treatment of scours during a period of eight years, during which time not one single calf was lost through the disease, although on an average twenty have been born every year.

Treatment consists in this: When a calf was known to be developing a case of scours it is taken in hand immediately, placed in a clean stall, well bedded, and given a dose of two ounces of castor oil, one tablespoonful of listerine, and tablespoonful of paregoric. All these ingredients are mixed thoroughly, put in a long-necked bottle, and given to the calf in the form of a drench. A baby's feeding bottle graduated into ounces is very useful for giving the dose.

If necessary, the dose may be repeated after six hours. If the case is a very severe one, ten drops of laudanum should be mixed with the ingredients above. Calves three or four months old can often be cured by giving them three ounces of castor oil, which will flush out the digestive system and relieve it of the irritating substances causing the scours.

FIFTY SHEEP FOR ONE YEAR

Editor The Maritime Farmer:

In this article I purpose showing the returns and profits accruing from a flock of fifty sheep during the course of a year. The year began October 1st, 1914, and ended October 1st, 1915. The sheep were grade Shropshires. The housing was in an open-front shed 20 x 30 feet. The farm was an average Cape Breton farm of 200 acres, situate twenty miles from Sydney. The farmer was a canny Scotchman, a descendant of the original Scotch immigrants who came to Canada in the year after the war of 1812. He was a good business man and a thorough farmer.

Now that I have dealt with the more important facts, I will proceed with the minor details: The sheep were left on pasture during the month of October. On November 1st they were put into winter quarters. The change from pasture to winter quarters was gradual; a large yard was fenced in around he shed, and from this a lane led to a pasture field. However, the sheep seemed to prefer winter feed once the grass was burned by the fall frost.

The winter ration was as follows: Each day the sheep received four pounds of hay, two pounds oats, and four pounds turnips per head. The hay was principally clover, with a little Timothy mixed. The oats were not of first quality, but were fairly good, although not entirely free from chaff. The best quality of oats was retained for horse feed or for sale. The turnips were run through a root cutter and chopped rather fine.

The hay was fed one half in the morning and the other half in the evening. The roots and grain were fed mixed at noon. The bottom of the hay rack was made tight, and made an ideal place to feed such stuff.

The winter feeding period lasted from November 1st to May 1st, or, to be exact, just one hundred and eighty-one days. The sheep were not fed the full ration at the beginning of the housing period, but whatever was short was made up for after lambing.

Lambing began about the middle of March. The early lambs caused some trouble and inconvenience, but this and the cost of caring for the sheep was amply made up for by the value of the manure.

The increase in the flock was as follows: Five sheep had no lambs at all, and twenty-one sheep had two lambs each, and twenty-four had one lamb each. This was a total of sixty-nine lambs. Six were lost in the spring, and one was killed by dogs or fox in early June. One sheep was lost during the winter.

Pasture during the six months was charged at the rate of three dollars per month. This was about all it would be worth as pasture for young stock. Pasture for the lambs was charged up against the flock at the rate of four dollars per month for three months. The cost of caring for the flock totaled up as follows:

Pasture for ewes, six months, at $3.00 per month	$18.00
Pasture for lambs, three months at $4.00 per month	12.00
19 tons hay at $10.00 per ton	190.00
21 tons turnips at $2.00 per ton	42.00
270 bushels oats at 40c per bushel	108.00
Lost one ewe at $10.00	10.00
Interest on cost of housing at 6 per cent	9.60
5 per cent depreciation on cost of building	8.00
Total cost of fifty sheep for one year	$397.60

Now, against this the total income from the flock in the year's operations was as follows:

50 fleeces, averaging 8 bs. each, less cost of shearing, at 32c per lb.	$120.00
29 lambs averaging 40 lbs each, at 18c per lb.	208.80
16 lambs averaging 48 bs. each, at 18c per lb.	126.08
14 lambs averaging 55 lbs. each, at 13c per lb.	100.10
59 lamb pelts at 65c each	38.35
Total income equaled	$593.33

The profits were as follows:

Total income equaled	$593.33
Less cost of upkeep for year	397.60
Total profit for flock	$195.73
Total profit per ewe	3.91

The above figures require a few words of explanation. The shed where the sheep were wintered cost about one hundred and sixty dollars. Interest on this at six per cent would amount to $9.60. This, of course, was charged against the flock. The building was calculated to last 20 years. Thus five per cent, or $8.00 per year, would be sufficient to charge for depreciation. These two items are very often neglected when charging profit and loss on farm operations. Shearing cost eight dollars, as no experienced men could be got. The wool sold for thirty-two cents unwashed, though later in the season it went as high as fifty cents per lb. The first lambs sold were the lightest and sold for the highest price. These were all sold at retail, and some charge for marketing should perhaps be made; however, as other produce was sold at the same time, it would be hard to arrive at the definite cost of marketing the lambs.

JOHN H. MacDONALD,
Cape Breton Co., N. S.

NATURAL FLESH IN CATTLE DEMONSTRATED

During the recent short course at the Iowa State College two calves, not old enough for veal, furnished a valuable lesson. Their carcasses showed the bodies before milk had had its effect in filling the fat veins and expanding the flesh. One of the calves was a thick, stocky youngster of Shorthorn ancestry; the other a delicate, thin, fawn-colored Jersey type. The difference in amount of inner muscle or lean meat in beef and dairy cattle is appreciated by too few people, particularly those who put cattle into the feed lot to be fatened for market. Demonstrations of this kind arrest attention and make the contrast strong, not for a comparison of the beef and dairy breeds, and so belittling the latter, but to show the depth of flesh necessary in beef animals.

Beef and dairy cattle have separate interests. Each class has its place, and well fills that place. Beef and dairy qualities cannot be solidly combined in one animal. The Shorthorn more than any other breed more nearly shows both these qualities. These qualities are distinct when developed in their highest degree. The beef producer, either breeder or feeder, must realize that a full quota of inner muscle or flesh is indispensable. When the breeder is selecting a bull he must not trust to straight lines and quality alone, but must see that the body is well equipped with flesh, that it may be transmitted to the calves; or when the feeder is buying stock cattle he must see that he has not even one of the dairy type, because it means an unprofitable gain and a cut-back when marketed.

Flesh is the foundation upon which to fill, cover, and enrich the carcass with at. The fat steer has the same lean meat proportionally as the calf. The natural flesh must be on the body at birth, because fat does not make additional muscle fibres; it merely grows those given by inheritance and expands them up to the adult stage. It is done by filling the several fat veins throughout the system, broadening the muscle tissue by furnishing adipose tissue at the fully ripened stage.

In the dual-purpose animal the fat is only in part stored upon the back; much of it is diverted to the udder. Thus the fat-forming compounds of the feed are divided. They produce less beef but more milk than in beef animals. The more milk formed the less beefy will be the animal.

Few stockmen fully realize the great importance of natural flesh. It is well to know conformation, but to know the composition is more important.

The carcasses of these two calves showed the points of difference plainly. The beef calf had a thick, heavily muscled thigh, round, full buttock, and a deep flank; the dairy calf a thin, scrawny leg, thin buttock, and hollow flank. One was a true beef animal, with thick loins and plenty of lean meat or muscling along the back, and over the ribs; the other a dairy type, with a flat loin, sharp chine, thin ribs, or bare of flesh. A smooth, thick, well-rounded shoulder was found on the beef calf; a thin, scrawny, shelly shoulder on the dairy calf. As the flesh was then, so it would have been had the steers been fattened for market. We would have a thick, plump, market-topping beef steer, and a long-legged, shallow-ribbed, light-fleshed steer with a cheaper market value. These statements present, substantially as given, the remarks made by "Uncle" John Gosling, of Kansas City, who conducted the demonstration.--Breeders' Gazette.

VALUE OF A BREEDING COW

In following the discussion as to prices of good breeding cows there seems to be much difference of opinion as to what may be considered a reasonable and safe price which a beginner may pay for breeding matrons for a herd foundation. One thing has been lost sight of is that price does not make the animal. The merit of the animal, allowing due consideration for the pedigree and reasonable assurance of her reproducing offspring as good as herself, should be the determining factor in value fixing.

No one will deny that a cow with a record as a consistent producer of high-class progeny is worth much more than one of equal individual merit that has not demonstrated her qualities as a breeder of good stock. Where one has an opportunity of choosing breeding material from such cows carrying blood that has consistently given the breed stock of superior merit and reproductive ability, the price may only be measured by one's financial ability, his fixedness of purpose, and his qualifications for engaging in the pedigree cattle business. There is no other rule for guidance in the breeding business. No one can succeed in the broadest sense who starts out to purchase a foundation herd with a determination in mind to secure so bany cows for a fixed amount of money. That would not be using the kind of judgment that ensures success. Quantity should not and cannot be the governing factor, if one desires to make a success as a constructive breeder.

Make selections of such matrons as have either produced the right kind or come from cows that have made good, and buy them. One of that kind, even though she should cost much more than four or five of the indifferently bred, mediocre sort, will return a greater profit and eminently more satisfaction when mated to a good bull than the others. Her cost will be governed by conditions, demand, and her own reputation, or that of her immediate ancestors as producers of good stock.

I have in mind the record of two cows in the Maxwalton herd owned by Carpenter & Ross—Rosewood 86th and her daughter, Rosewood Pride. The mother was imported by W. D. Flatt, and sold at auction for $925. She and her daughter have long been rated as the most valuable of the reserve cows at Maxwalton. As evidence of what a good breeding cow is worth, and the possibilities of the profit that may be derived from a good producing cow, the record of sales of the progeny from these cows may prove of interest to breeders of beef cattle and those who contemplate engaging in the business. The second calf from Rosewood 86th was Rosewood 87th, by Whitehall Count, a son of Whitehall Sulton. She sold for $200 at auction, and later produced a number of calves that sold in excess of $1,000. The third calf was Maxwalton Rosewood, by Avondale. She produced the noted sire Double Dale, and brought $1,000 at auction. The fourth calf was a bull by Avondale, which realized $1,000; and the fifth calf, the noted bull Silverdale, brought $1,330 at a Maxwalton sale. In the following order her calves brought the prices given: Pride of the Dales, $1,000; Pride of Avon, $800; Rosewood Lady, $300; Dale's Farewell, $1,000. Maxwalton Rosewood 3d, a yearling heifer, and a bull calf are in the Maxwalton herd. Here is a total for the progeny sold of $6,630. Her daughter Rosewood Pride's first calf sold for $280. Then follows The Callant at $1,000, Whitehall Rosedale at $2,325, Maxwalton Rosedale at $600, Pride of Albion as a calf at $1,800, Maxwalton Pride at $500, Avon A Dale at $600, Maxwalton Pride 2d at $800, and a yearling heifer and a heifer calf in the herd, with a total in cash for progeny sold of $7,905. This makes a total of $14,535 in cash sales from two cows, mother and daughter. Lady-in-Waiting, in the Anoka herd, held a record as a producer exceeding these, her progeny selling for $13,000 There are many

Worms Make Children Peevish

Some symptoms of worms are: Deranged stomach, swollen upper lip, sour tongue, offensive breath, hard and full belly, with occasional gripings and pains about the navel, pale face of leaden tint, eyes heavy and dull, twitching eyelids, itching of the nose, itching of the rectum, short, dry cough, grinding of the teeth, little red points sticking out on tongue, starting during sleep, slow fever. If you have the least suspicion that your child is troubled with stomach worms or pinworms, don't hesitate—get a bottle of Dr. True's Elixir. This remedy has been on the market over 60 years. Put your child on the way to good health by using Dr. True's Elixir, the Family Laxative and Worm Expelled. Good for adults also. At dealers', 35c, 50c and $1. Advice free.

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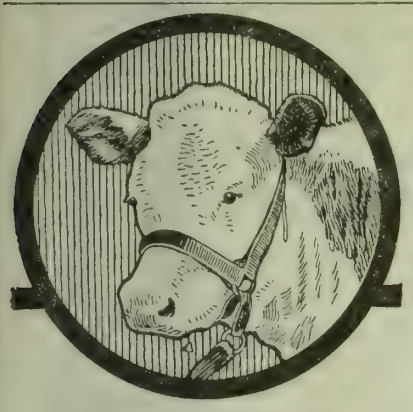

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similar examples in the breed.

What is a good cow worth, or what should a beginner pay for material for foundation purposes? It all depends on what he is getting for the money, his purpose, his qualifications for the business, and his ability to pay for good ones as he finds them.—Breeders' Gazette.

MAKE WETHERS OF RAM LAMBS

One of the greatest losses in the sheep business comes from the lambs sent to market without having been castrated. The operation is extremely simple, and should not be neglected. The ram develops sexual characteristics at about three months of age. They then become restless, worry the rest of the flock, and fight among themselves. They cease to make satisfactory gains, and prevent the others from so doing.

Experimental feeding of two lots of 12 head each, one lot castrated, the other entire, each receiving the same feed and treatment, resulted in 900 pounds weight for the rams, while the wethers weighed 1020 pounds. Another experiment showed that wether lambs gained in 60 days 2¼ per cent in live weight and four per cent in dressed weight more than did the ram lambs.

Rams become coarse, and their increase in weight comes in the low-priced parts of the carcass. Wether lambs, on the other hand, develop more in loin and back, the region of high-priced cuts.

Upon the Buffalo market the difference in price between ram and wether lambs has ranged from 65 cents to $1 a 100 pounds in the same month in favor of the wether lambs. Quite often ram lambs grade as culls and sell for as much as $2 a 100 pounds less.

If castration is left until past the fourth week it is more severe. The quarters should be as clean as possible for the operation. One of the best methods is to cut off the lower third of the scrotum with a clean, sharp knife, and force the testicles down. They can be grasped by the thumb and two fingers and pulled out, one at a time, with the spermatic cords attached. If the lamb is rather old and the cords will not pull out, they can be scraped off above the testicles. Many sheep breeders use their teeth for drawing out the testicles, but this is a disagreeable practice to many people.

A pan of water containing a 2 or 3 per cent solution of some good disinfectant should be used by the operator in washing his hands and the knife, and the wound should be disinfected after the operation. Ointments, such as carbolized oil—20 parts sweet oil, one part carbolic acid—and pine tar salve—equal parts pine tar and pure lard—are also recommended for dressing the wounds, but it is impracticable to use disinfectants or ointments when the flock is large.

Lambs are sometimes unsexed by cutting off the scrotum close to the belly with heated shears, or with a special emasculator, but this method is not satisfactory. It is not advisable to castrate an aged ram, for the difference in value of the carcass is scarcely worth the trouble.

THE BROOD SOW AND HER LITTER

The brood sow at farrowing should be in good flesh. The very fat sow usually has a weak litter, difficulty in farrowing, and is clumsy, while the very thin sow often has small, poorly nurtured pigs, and is not in condition to milk heavily. Provide a warm pen for farrowing, and be on hand to see that the pigs are thoroughly dried and have a good feed shortly after birth. Give the sow a warm drink after farrowing, and start with a light grain ration, gradually increasing the same to form a rich, nutritious, and succulent ration. A good grain for the newly farrowed sow would be 3 to 6 pounds of a mixture of ground oats, 3 parts; shorts, 3 parts; and oil cake, 1 part. If skim milk is available, give 6 to 10 pounds daily. In the absence of grass, mangels (6 to 8 pounds per day) give excellent results. Exercise the sow and litter daily. Don't overfeed the sow, or sickly, scouring pigs will result.

Feeding the Litter

Make a "creep" in the corner of the pen, and teach the little pigs to eat at 3 to 4 weeks of age. A good ration for the weaning pigs is composed of barley, 3 parts; shorts, 3 parts; and oilmeal, 1 part, fed as a slop. If skim milk, buttermilk, or whey is available, start with 2 pounds and gradually increase to 8 pounds daily. Feed only what the young pigs will clean up. If skim milk, etc., are not available, use Digester tankage or oil cake meal to balance the ration.

Feeding on Pasture

A piece of good pasture set aside for the sows and litters will give excellent returns; the following make good pasture: Alfalfa, clover, rape, rye, oats, or grasses. For weaned pigs, or even thin brood sows, a home-made self-feeder gives as great gains as the best hand feeding, and saves over half the labor. Mix the meal ration and fill the feeder once a week or fortnight, depending on the size of the feeder and the number of pigs. Finish the pigs for market at 6 to 7 months of age, weighing 170 to 200 pounds; you will thus make greatest profit.

AT FARROWING TIME

You can tell when the sow is soon to farrow by the enlargement of her udder. When milk can be drawn she is due within 24 hours.

For a day or two before farrowing an all-slop ration is better than dry feed. Some men give only water the last 24 hours unless the sow shows unmistakable signs of hunger.

Give the sow clean, dry bedding. Shredded corn stalks, oats or wheat straw, or dry leaves are all good. Pigs are likely to get tangled in long straw, so chopped straw is preferable. Barley straw and dusty bedding are very bad.

When the sow burrows a deep, hard-packed nest the pigs frequently get caught and crushed. She is less likely to do this if she is well sheltered and out of the cold.

While the new-born pigs do not need any such care as lambs, they are more sensitive than many people think, and unexplainable deaths later are often due to chilling in the critical first hours. If the weather is cold, put them in a basket lined with straw or chaff, with a blanket over the top, but leave a space for air, as they smother easily. After half an hour's warming let them nurse. If it is very cold it is best to put them in the basket for another hour or so before leaving them with the mother.

To guard against milk fever and to help prevent the pigs from scouring, feed the sow lightly for 24 hours after farrowing. First give a good drink of water, lukewarm, but never cold, then a light bran mash. Be a little more generous each day up to the fifth, after which it is safe to feed abundantly.—G. B. Hill.

The manure of sheep is more valuable, weight for weight, than that of any of the other farm animals; but it is also more liable to loss through fermentation because of its lower moisture content than are the so-called "cold manures" of cattle and swine. Nitrogen is the principal fermentation loss, but leaching will effect both the phosphorus and potash content.

The upturn in the price of hogs makes the spring crop of pigs seem more worthy of sitting up with if necessary. No good farmer ought to begrudge the loss of a few hours if a good litter of pigs may be saved by it. With gilts it is sometimes necessary to be there to save all the little fellows, while again the sow will care for them better if left alone. It all depends upon the nature of the sow. Some are natural mothers and require no watching during the first hours.

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THE HORSE

THE COLT DURING HIS FIRST MONTHS

It is a money-losing operation to raise a colt by anything less than the full-feeding system, declares Horse World. Even when the dam is a good milker and has nothing to do but raise her foal, it is better to give the colt a little grain as soon as he will eat it, and that will be found to be at a surprisingly early period in his life. Commence by giving a little grain to the dam from a box placed on the ground so the colt can get at it, and in a few days he will have learned to partake of it. After that it is better to provide a creep into which the colt or colts can go and get the grain without interference from the dam. As the colt grows older, increase the amount of grain given, and when it comes weaning time not only will that period be passed with less danger of stopping the little fellow's growth, but, as he will have been taking less of his dam's milk, it will make it easier to dry her up.

Feeding, however, is not the only attention it pays to give the colt during the first months of his life. For the good of every colt, he should be halter broken before he is two weeks old. In the first place, it is much easier to break a colt to halter when he is a few days old, and the next place breaking at that time is much better for the colt himself, as he is not half as likely to injure himself fighting against the halter as he is when he gets to be a strapping, big, strong fellow five or six months old. Broken when a few months old, a colt never forgets his lesson, and it adds much to the ease with which he may be made acquainted with the harness when the time comes.

Another particular in which the colt should receive attention during the first few months of his life is in regard to his feet. The form of the colt's legs depends largely upon the shape his hoofs assume during colthood. Seldom do the hoofs grow evenly. Sometimes they wear off o nthe inside while the outside remains long, and that influences the bones of the leg to assume a position that causes him to toe out, and in the light harness horse that means a knee-knocker when he comes to be used on the road or track.

Conversely, if the inner side of the hoof is allowed to become high and the outer side is worn off, the colt becomes "pigeon-toed," which is almost as much of a fault as the other formation, which results in his becoming a knee-hitter.

Watch the little fellow's feet closely, and with a rasp keep the hoofs even and of the proper shape. These details will not require much time on any one occasion, and if they are looked after it will add much to the colt's value in after years.

CARELESS FEEDING AND WATERING MAY KILL HORSE

Many horses are killed and many more are injured by careless feeding and watering.

Never water a horse immediately after feeding grain. This washes the grain through the stomach before it is properly mixed with the stomach juices and is liable to cause colic.

If the horse is very warm, let him drink a few swallows and then hold his head up for a minute or two, and thus cool his stomach slowly. Try it yourself in hot weather. You can drink a quart of cold water without injury if you will but take several minutes for the first few swallows.

When horses are brought in hot from their work they should first be given water cautiously and then fed hay and grain together, allowing them to exercise their own judgment in the selection of their feed.

While waiting for them at the watering trough, the time can be profitably used in removing the harness, at least the collar, and cooling the shoulders by washing in cold water. Removing the hot harness in a hot barn during the hot noon hour is a great relief to the horse and is really worth while.

When a horse becomes colicky or is foundered from too much grain or cold water on a warm stomach, there is no one to blame but the one who had him in charge, and it is he who must be charged with either ignorance or carelessness. Horses are worth money and their services are indispensable. Their care and management should be given more consideration.—Geo. H. Glover, Colorado Agricultural College.

CASTRATING THE COLT

Most farmers and horse breeders castrate colts when they are about a year old. Some prefer to delay this operation until the young animals have reached the age of two years, claiming that this will give them more masculinity. Some excess in development may thus be gained, but if the colts are allowed to go too long they are difficult to handle and there is more risk. At one year old there is not much risk, provided the operation is performed by a competent person with proper regard for cleanliness and the subsequent care of the colt.

The operation should always be performed by a reputable veterinary surgeon, or by some one who has had sufficient experience to work skilfully. The best season is in the spring, at the beginning of warm weather. At

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SWORN STATEMENT

"This is to certify that I, Wesley Maxwell, of the Township of Caledon, was cured of kidney trouble by taking Dr. Chase's Kidney-Liver Pills.

"Wesley Maxwell."

(Sworn before me as correct this 6th day of January, 1915.—Wm. Hawkins, Sen. Justice of the Peace.)

This statement is also endorsed by the Rev. Geo. W. Robinson, who is Mr. Maxwell's pastor.

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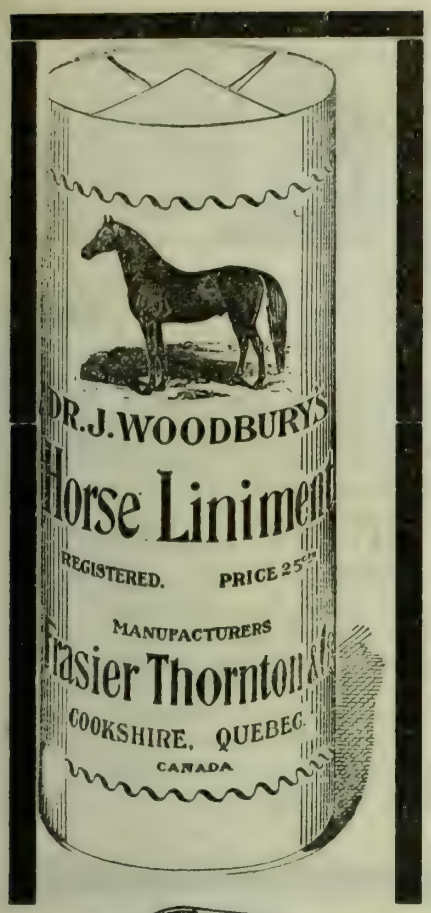

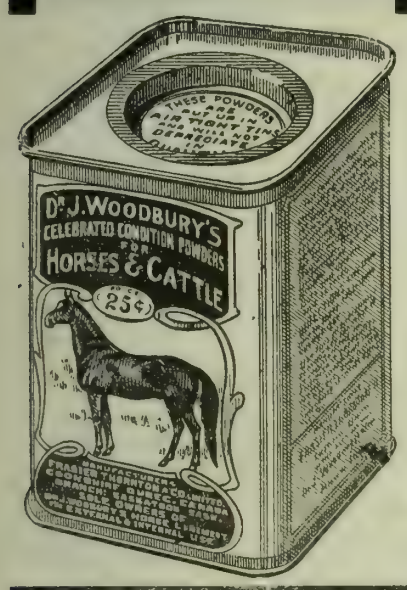

that time the flies have not yet appeared and the weather is comfortable.

After the operation has been performed, with proper regard for clean hands and instruments, the colt should be turned out in a good pasture, with access to a clean shed in case of storm. There is little danger of his "catching cold." The danger of wound infection if he is kept around the barn is serious.—W. F. Purdue.

CAREFUL FEEDING PREVENTS COLIC

Many a horse owner dreads the occurrence of colic in a horse, yet I firmly believe that most cases could be prevented by a few simple precautions. Make it a fast rule always to water your horses before feeding grain and never afterward within a period of three hours. I think there is then little danger.

Over twenty years ago I had a mare down with a serious attack of colic. She had been watered after feeding grain, which was contrary to my habit. I was told that without doubt the watering after feeding grain was the cause of the attack. I therefore made it a strict rule always to water before feeding and never afterward. I have kept four and five horses in my possession during the past twenty years, with only one bad case of colic, by strictly following this rule.

Horses' stomachs are small compared to the size of the animal. If the horse is watered after eating his grain there is danger of washing part of this undigested grain from the stomach into the intestines and causing serious trouble, an dsometimes the loss of a valuable animal.

The best plan is to water a horse, then feed hay, and in about half an hour feed grain. I feed the hay and grain at the same time unless the animal is very warm, as this is more convenient.

My teams are always allowed access to the watering trough when brought to the barn at noon and evening, unless for some reason they are unusually warm. In this case they stand in the stable for a while without anything to eat until they have been watered, but this is a very unusual occurrence.

If a horse is accustomed to drinking before eating, when coming from work, I do not think it is harmful to give him all the water he wants, even though he is pretty warm. I have never had any bad results from this method.—C. R. Weidle.

OILING HARNESS WET OR DRY?

When I was a boy I worked in a small upper-leather tannery. In dressing the leather the currier always oiled it while it was damp, saying the oil would dry in as the water dried out. I think the way to oil harness is to wash it clean, and oil it while it is yet damp. The harness shops here dip team harness without washing at $1 per set. My boys think it best to oil the leather when it is dry. Which is the better way?—C. C., in Breeders' Gazette.

Captain M. H. Hayes has the following to say regarding this point: "Before applying the fatty matter, especially when the leather is dry, it is advisable to dampen the leather, because when it is in that state it will absorb the oil or grease much more readily than when it is dry." Compositions used to polish "show" harness should never be used on damp leather, however. I do not think much of trying to oil dirty harness without first taking it apart and thoroughly cleaning it. Use warm, soft water, castile soap, and a brush if necessary.—J. L. Edmonds, Illinois Experiment Station.

Galled shoulders are easier and more cheaply prevented than cured. See that none of the mane works under the collar at neck or shoulder; keep the face of collars well cleaned and oiled occasionally. Wash the neck and shoulder of the horse every evening with pure cold water.

Proper adjustment of harness is very essential, especially during the season of heavy work and excessive heat. The collar should be neither too small nor too large—one is about as bad as the other, and either will practically ruin a horse's shoulder in an incredibly short time.

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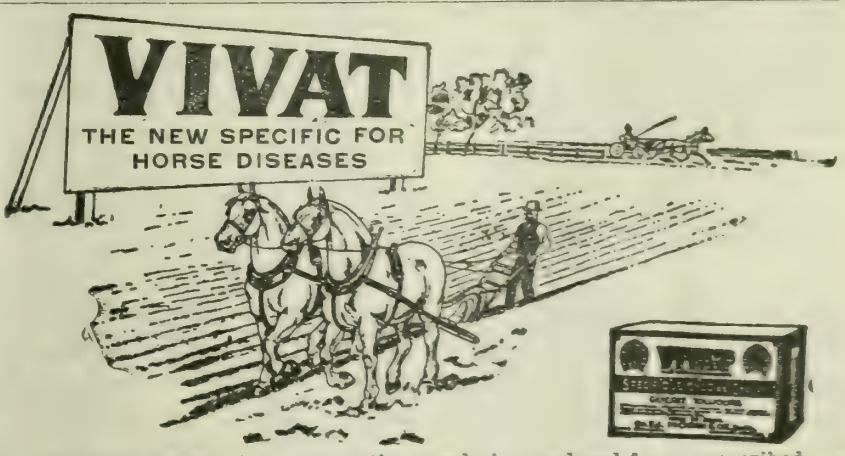

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POULTRY

THE POULTRY RAISER'S OPPORTUNITY

The Present Market Outlook Warrants Greatly Increased Production During 1916

From present indications, Great Britain will require all the eggs and poultry Canada can produce during 1916. Last year, as a result of greatly increased production, Canada was able to ship to Great Britain the largest quantity of eggs exported since 1902, and at the same time reduced her imports for home consumption by nearly a million dozen.

Canadian eggs have found favor in the British market, and the prospects are that, providing they are available, much larger quantities will be shipped this year. The unusually high prices prevailing at the present time are largely due to this anticipated export demand.

Prices for poultry are also high, and will likely continue so for the rest of the season. Last fall and winter all the surplus Canadian poultry was exported at highly profitable prices. Between fifty and sixty cars of live poultry were shipped from Western Ontario to the Eastern States alone, and in the Maritime Provinces, particularly in Prince Edward Island, the export demand for canned poultry has greatly enhanced prices to producers.

Although some uneasiness has existed on the part of the trade as regards transportation facilities in view of the high freight rates and the shortage of boats, it is now reasonably certain that an even greater demand for Canadian poultry and eggs will occur this year. It is important, therefore, that every poultry producer take steps to profit thereby by hatching as many chickens as possible this spring.

Now is the time, by hatching early, by hatching everything possible in the month of May, to guard against the marketing of so much small, undersized, poorly finished poultry, which annually becomes a drug on the market in the fall of the year. Again, it is only by hatching now, and giving the chickens every possible chance to thrive and grow, that a maximum supply of eggs can be obtained in the winter time.

Given their proportionate amount of attention, the growing of poultry brings quick and profitable returns to the farmer. With the increasing cost of meats, milk, butter, etc., there is a constantly increasing demand for poultry and eggs. The labor problem is not critical, as the boys and girls on the farm can readily take care of the poultry. The cost of feed is nominal, prices for poultry and eggs are high—the highest, in fact, for many years. It is obvious, therefore, that Canadians have a patriotic as well as an economic duty to perform in making the year 1916 the banner year for poultry production in Canada.

THE CHAMPION HEN

The Barred Plymouth Rock, No. 414 M, which made such a wonderful performance record at the Maine Agricultural Experiment Station in her pullet year, has begun laying again in her second year, and bids fair to make a record which will equal and possibly surpass, that of her pullet year. As the record stands now, the bird is the highest laying hen of the Barred Plymouth Rock breed that has yet been produced. When it is remembered that it was only a dozen years ago that a record of 200 eggs in a year was considered wonderful, the people of Maine may well be proud of the fact that there has been produced within their state a hen capable of laying 298 eggs in 12 months. Such an achievement shows in a concrete way the practical value of investigations regarding the principles of breeding.

This remarkable bird, No. 414 M, was hatched on May 12, 1914. By many poultrymen this would be considered a late date of hatching. The notion prevails quite widely that unless a bird is hatched in March or April it will never make a great layer. How erroneous this view is is shown by the performance of the bird here under discussion. Hatched on May 12, she laid her first egg on November 4, 1914. She was then 176 days old when she laid her first egg, or just under six months. In the month of November, 1914, she laid 11 eggs. She was evidently at this time trying out her paces and getting into proper condition for an extended record. On the first day of December she began the pace which she maintained to the end of the year. During the month of December she laid 28 eggs, in January 29, in February 25, in March 29, in April 27, in May 26, in June 22, in July 31, in August 26, in September 24, in October 20, making a total of 298 eggs in the year. The longest continuous perious during which the bird laid an egg every day were from December 19 to January 19, or 32 days; from March 11 to April 15, inclusive, a period of 36 days; from July 1 to August 10, inclusive, a period of 43 days.

It is obvious that during this year when 298 eggs were laid, this hen could not have spent a good deal of time being broody. As a matter of fact, she was broody but once during the year. She showed signs of broodiness on June 14, and was put in a coop by herself in the ordinary way that broody hens are treated at the Maine Station. Under these circumstances, she very quickly changed her mind about wanting to sit, and on June 20, six days from the time when she first showed signs of broodiness, she began laying again. This is the only time she has ever been broody in her life.

The last egg of the pullet year was laid October 29, 1915. By November 9 she was well started in moult. She rested nearly three months, beginning laying again on the 30th day of January, 1916. She immediately started in at her old pace, laying 23 eggs in the month of February, 1916; this is only two eggs short of her performance during the corresponding month of her pullet year, when she laid 25 eggs. She is continuing to lay now at the rate of about six eggs per week.

In no respect is this bird a freak. She is simply the result of well planned and carefully executed breeding. She is trim and smart in appearance, of good size, weighing 6.7 pounds at the end of her pullet year's laying. This is unusually heavy for bred-to-lay Barred Plymouth Rocks. There is nothing in her external appearance, shape, or body or type that would mark her out from any one of hundreds of other birds on the poultry plant of the Maine Agricultural Experiment Station. She has three sisters on the plant, all of which fall in the 200-egg or better class. No one of the sisters, however, equalled the record of 414 M.

Regarding the breeding of this bird, it may be said that she came from a very high-laying ancestry. The record of her dam was 210 eggs in a yar. The average production of her two grandams was 212 eggs in a year. If we go still farther back the same thing is found. The average production for one year of her four great-grandams was 194 eggs. It thus is evident that there is concentrated in the blood of this hen high-laying quailties for generations back. This wonderful performer, 414 M, is not inbred at all, in the ordinary acceptance of the term "inbreeding." She represents the bringing together of a number of different blood lines, each one of which has been highly bred for egg-producing ability.

At the present time this bird is bred in the mating pens at the station poultry plant to a cockerel of quite as remarkable qualities as she herself shows. This cockerel, No. 160, weighed nine pounds when nine months of age. This is a remarkably high weight for a Barred Plymouth Rock at that age, and indicates the constitutional vigor and vitality which he possesses. His dam, 63 M, laid 247 eggs in her pullet year. The average performance during the pullet year of the two grandams of this cockerel was 191 eggs, and the average production during the pullet year of his four great grandams was 196 eggs. This cockerel is only very distantly related to 414 M, so that the offspring from this mating will not be inbred at all. They should combine in a high degree the most desirable qualities of utility poultry, namely, high constitutional vigor, good size, and tremendous laying abiilty. Cockerels from this mating should be extremely valuable in grading up flocks of ordnary layers.—Charles D. Woods, Director Maine Experiment Station.

HENS LIKE VARIETY

In commercial egg production feeding is a prime factor—not the mere fact of feeding, but the kind, quality, amount, method, and regularity. It is not so much the kind of feed used as the elements included. Eggs are composed of water, protein, fat, and certain minerals in small portions. Water is the principal ingredient, protein next, and fat third.

In the feed, potein and fat must be provided in the right proportions. To supply these, and at the same time make the ration economical and give change enough to keep the hen's appetite robust, is the problem of the poultryman.

Corn, wheat, oats, and kafir are the four grains most commonly used. I would not feed any of them exclusively, and using all of them will be better than otherwise, but the relative price must be taken into consideration in deciding this. Wheat is too high now to feed profitably.

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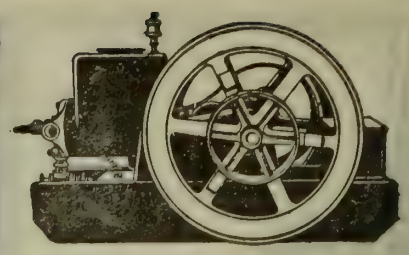

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must be considered that oats have only 20 pounds of actual grain to the bushel. Forty cents per bushel would be practically 2 cents per pound, and I would rather buy oats at 2 cents than any other grain. To my mind there is no better feed for chickens than oats, any if they are fed plentifully there will be less complaint of lack of fertility in the eggs.

No other grain will take the place of corn in my estimation, but if compelled to use but one grain I would use kafir, for it will come the nearest taking the place of the corn, and will supply the elements we get from the other grains in good proportions also.

I would not feed corn alone, either, for it is fat producing, and lacks in protein, leaving too much of the latter to be supplied from other sources. No grain ration will supply enough protein without an over supply of other elements.

Meat meal is the principal source of protein supply in the modern balanced ration. Alfalfa meal is also rich in protein. An economical ration provides 7 to 10 per cent of meat meal in the whole amount of feed consumed, including grain and mash.

Alfalfa meal in the mash will permit of some reduction in the meat meal. This mash should have a large percentage of bran, for bran is a good regulator for the hen's digestive system.

Nothing Better Than Skim Milk

Milk can almost or entirely take the place of meat meal if the hens can have all of it they will drink. There is nothing like milk to start active egg production and keep it up.

Provide a good supply of the beets and other roots for the hens during the winter when they can get no green forage. A few nails driven into the wall and a split mangel pressed back on each one with the face out will be all that is needed, and the hens will help themselves.

Beets are easy to keep and can be had from fall until spring. They should be buried or put in a cool cellar and covered to exclude the light and air some, or they will wither conideably.

Carrots and small potatoes are both good. Buy a load of mangels this fall for your hens if you have not raised them, and see if they do not repay you for them.

Green Food is Very Important

I would never go into the winter without a field of wheat or rye down where I could turn the flock on it conveniently in the fair weather during the winter, especially if I did not have a good blue grass pasture for them. Blue grass remains green so much of the winter it answers very well where one has it, but it is not so good as rye or wheat.

Where no other green in available during severe winter weather sprouted oats can be provided without much trouble. They are an especially healthful food when prepared in this way, and well worth the trouble, even if you have other greens too.

Red pepper and mustard are both relishes that help to keep up the appetite, but they must not be fed too heavily. Just a small amount in the mash or in a boiled feed once in a while. Celery tops, cabbage leaves, and anything of this kind will be welcomed by them.—L. H. Cobb.

PERFORMING AUTOPSY ON FOWLS

The poultryman should make it a general practice to examine all poultry that die from an apparently unknown cause. By so doing one is often able to determine the nature of the existing trouble. To make a post mortem examination on a bird, proceed as follows:

First remove the feathers from a large portion of the carcass; then with a knife separate the legs from their attachment to the body. In the next step the peritoneal cavity is opened. Ths is best accomplished with a pair of scissors, but a sharp knife will serve the purpose.

Start from a point in the posterior abdominal region and cut forward through the ribs on each side. This will free the posterior portion of the sternum or breast bone, and it can now be broken and laid back from the operator, allowing easy access to the thoracic and abdominal organs. The general appearance of the organs in their natural position should first be observed.

Of all the organs of domestic poultry the liver and intestines are most frequently involved in infectious diseases. The liver should always be removed and examined carefully; next examine the spleen (commonly known as the melt), which is a small, nearly spherical organ varying from one-half to one inch in diameter. This organ is often times involved in tuberculosis, but one is rarely able to discern abnormalities with the unaided eye in other diseases.

The intestines should be opened from the stomach to the anus, the intestinal contents washed out, and the mucous membrane examined for hemorrhages, diphtheritic membranes, inflammations and other changes.

Of the thoracic organs the heart usually shows the most striking lesions. Very rarely are the lungs involved in the specific infectious diseases. Even in tuberculosis the lungs are involved in comparatively few cases.

If the poultryman makes the post mortem examination of all birds that die a regular part of the routine of his business, he will soon be able to recognize any deviations from the normal, and act accordingly.—Dr. Robert Graham, Kentucky Station.

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Canadian Government Railways' Popular Train, Halifax and Montreal, May 15th

From its initial run, the "Ocean" won popular favor, has retained its friends, and is always making more. It will be welcome news to thousands of travellers that the "Ocean" is to be restored to its regular run on its regular schedule May 14th, from Montreal at 7.25 P.M. and daily except Saturday thereafter, arriving at Halifax 10.45 P.M. the following day; May 15th, from Halifax at 8.00 A.M., and daily except Sunday thereafter, arriving Montreal 8.05 A.M. the following day.

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MAKING A HEN'S NEST

Next time you find a nest of eggs which a hen has stolen away, take a lesson in the proper architecture of such a structure. It may save a few broken eggs or a poor hatch the next time you proceed to set a hen in your own clumsy human fashion.

The keynote of the nest is flattened, shallow design. This is the way Nature has demanded it should be constructed to give the best results. How different from the deep, hollowed out contraption into which so many people pile the eggs they expect Biddy to transform into downy chicks.

A nest to prove satisfactory should be shallow enough to permit a hen to turn her eggs properly. It should be flat enough to permit the newly hatched chicks to lie where they are when released from the shell instead of sliding down into the bottom and having the eggs roll on top of them.—Orin Crooker.

SUCCESS WITH TURKEYS

Good two-year-old fowls are the best for mating. I always raise my hens so they will be acquainted with me and their surroundings, and then procure the male from some flock not related to mine. I have always set poultry hens on the first eggs and the turkeys on the second layings.

The young turkeys when about 24 hours old are placed in good pens with the mother hens, then given pure water, fine gravel, soaked bread dusted with black pepper, and hard-boiled eggs chopped fine.

For the yard I take three long boards about a foot wide and put the coop in one corner. This coop must be perfectly dry. As soon as the young ones are able to fly over the boards I let them roam around the yard and onion patch. Onions are their delight, and nothing is healthier for fowls of all kinds.

They should be fed a little whenever they come up, and good cold water kept out at all times. Charcoal is always before them with dust baths of wood ashes. Air-slacked lime is scattered in their coops. It absorbs dampness and keeps away lice.

After they are about two weeks old I feed corn and oats ground together, about equal parts of each. Too much corn meal is apt to make them gouty. For fattening in the fall I feed corn, oats, and rye.—Miss L. H.

SAVING DROWNED CHICKS

A heavy rainstorm coming up too quickly for me to get my chicks in left me dismayed, but not surprised, for the ground was level, with no way for the water to run off, to find lifeless chickens scattered all about.

A visiting friend declared the little chicks could be saved. This seemed impossible, as they were already stiff, but she insisted, so we gathered them up—a candy pail full. Under her direction, I filled several large pans with oats, heated them, and into these put the chickens, covering the pans with cloth and setting them on the stove and into the oven. This warmed the chickens thoroughly, and I lost only six.—I. G. Witt.

CAUSE OF SOFT-SHELLED EGGS

Soft-shelled eggs are common in the early spring. The first and usual cause is that the bird is too fat. In this case make the hens take more exercise by scratching in deep litter for their feed, which should be reduced somewhat. Also, feed sprouted oats or beets. Lack of lime will also cause it. This may be supplied by feeding crushed oyster shell or old plaster. Forcing the hens for heavy egg production and the excessive feeding of a loosening ratio will also bring about this condition.

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

If You Quit Talking

The circus had arrived. It was a straggly affair, singularly tame looking, in spite of its Wild West pretentions. In the parade were the usual bronchos, ridden by stolid, blanketed Indians and Mexicans in outrageously pink shirts and wide hats, cowboys and "cowgirls," and, lastly, a few squaws with their offspring suspended between poles attached to their ponies.

But it was a show, and there were horses. This latter fact proved the chief attraction to Ellis Pyke. Besides the bronchos, for which he cared little, were the great, dappled Percherons which hauled the few menagerie wagons the show boasted. For it carried a rusty elephant, a lion or two, and some mangy wolves as a complement of its woolly, but not noticeably wild, western exhibit. Ellis stood looking at the great horses after the parade was over, though most of his comrades were busily watching the tent go up in preparation for the afternoon's performance.

"Wanta job, kid?" grinned one of the men, noting the country boy's absorbed look.

"Would you give me one?" The answer was both incredulous and anxiously inquiring.

"Sure. We need about four lads your size. Any more of you at home?"

"I don't know as my folks would lemme go," answered the boy, hardly conscious of the last question.

"What'll you give us?" unexpectedly put in a third voice. Its owner was a boy Ellis knew, a harum-scarum lad about town.

"Sixteen a month and your keep," was the man's impressive reply.

Ellis gasped. He was only seventeen, and the sum named sounded big to his ears.

"What doing?" he asked eagerly. The man looked at Ellis sharply. His calling had made him a good judge of human nature. Country was written all over Ellis' broad, good-humored face, but there was more than the rural atmosphere about the boy.

"Like horses?" he asked briefly, confident of what the answer would be.

"You bet I do."

"Well, you can have the job of tending to these midgets," waving his hand toward the great draft horses, "and your pardner here will come in handy somewhere."

The bargain was made almost before the boys knew how it happened. The man had a persuading way, and the big Percherons made their own powerful plea to Ellis. Almost anything that promised excitement and change would lure Cromer Haight, so the business went through with a rush.

It was only after they had started home for their clothes that the question, "What'll pa and Ma say?" began to worry Ellis.

"Don't tell 'em till you're gone," advised Cromer. "Then you can write and tell 'em what a good job you got, and it'll save 'em a lot of worry."

It was specious reasoning, and carried the day. Ellis dreaded lengthy explanations and "fuss," so this seemed the easiest way out of it. For the first time in his life the country boy planned to take his destiny in his own hands, without consulting his parents.

It was not a difficult thing to do. The family had not returned from the afternoon's performance of the show, and the old clothes that the showman had assured him would be all he needed were easily procured. As far as that went, he could have taken them with all the family there to see, for Ellis was a boy that was trusted.

Not so Cromer Haight. He had kept his family in hot water from infancy. Toward evening of that eventful day, Father Haight began to look about for and telephone concerning his offspring.

Cromer was usually watched until the circuses were well out of town, but today, because of being in the reputed company of Ellis Pyke, this surveillance had lapsed a bit.

The boys were royally feasted and entertained with the best the show afforded that evening. There was a limitless supply of lemonade, and plenty to eat. Numerous bottles of stronger liquid circulated among the men, but none were offered the boys. The showman knew his business too well for that, but he thought it well to keep the boys near him and occupied until the show got out of town. Two of their men had just left because of unpaid wages, and they were decidedly short of help.

The boys were in the best of spirits. Circus life surpassed even their wildest expectations. Ellis had already made friends with the big Percherons, and the showman's beautiful, silky-haired dog had become his inseparable companion.

"Dog knows who to take to," laughed his master. "Never did take such a shine to me."

It was late when the show was over. Ellis walked sleepily beside the horses as they drew the gilded wagons to the string of waiting flat cars. He hardly noticed that Cromer disappeared soon after the show broke up. He was stumbling along, looking neither to the right or left, when two men suddenly appeared in front of him.

"Is that you, Ellis?" asked one of them, with a noticeable tremble in his voice.

Ellis looked up and saw his father.

"Will you come home without any fuss? Your mother is terribly worried."

"Why, you see—" began Ellis, astonished, when suddenly the light of a street lamp caught a policeman's star on the other man's coat. In an instant the boy's independent spirit flamed up.

"No, I won't," he said bluntly. "I got a good job, and I'm going to keep it."

The remark was half bravado, but the policeman had received previous instructions, and now stepped forward to do his duty as an officer of the law. He laid a detaining hand on Ellis's shoulder, with the significant remark: "I'll see that you get home safely."

Ellis flung off the touch as if it had been poison. With flaming cheeks he wrenched himself loose and ran madly toward the string of flat cars. To be arrested by a policeman! The country boy could fancy no keener disgrace. He ran widly, doubling, turning, twisting in and out of the tangle of circus paraphernalia until he had eluded his pursuers. He ran without any clear notion of where he was going, until the words "Your mother's terribly worried" flashed into his memory.

He had never before brought worry to his mother. Habit reasserted itself; he turned and ran homeward.

His frantic mother met him a block away, and, as is the way with some energetic natures, her terror and anxiety found an outlet in upbraidings somewhat out of proportion to the offense committed. She talked all the way home. Reproaches that stung his conscience and yet irritated him to the verge of madness by their endless repetition, fell in an incessant stream from her lips. He was dismayed and utterly nonplussed by his family's attitude toward the affair, and utterly unable to understand why it assumed such enormous proportions in their eyes. At first he tried to explain, but the effort fell flat when he caught a glimpse of his mother's tear-swollen eyes in the light of the corner arc lamp. He walked fast, in an unconscious effort to leave the stream of talk behind, but it caught up with and overflowed him.

He began to be conscious only of an overwhelming desire to get away by himself and think it out. It was impossible to think at all in that stream of talk. The lashing irritation of his mother's tears and reproaches vaguely reminded him of the swarms of mosquitoes that used to settle on him in the hazel thickets back East. The policeman was bad enough, but his mother's tears and reproaches were becoming intolerable, the more so because they could not be thrown off, like the policeman's touch. If only he could make her understand that he hadn't meant to worry her so!

His anxiety to reach home brought him almost running to his room door.

"You're trying to get away again," sobbed his mother. Frantic with new terror and anxiety, she hurried in after him and locked the door.

It was the last straw to the weight of indignities heaped on the proud soul of the boy. Choking with rage, he stood sullen and defiant before her.

"You can't keep me home by locking the door," he flamed out, "and if father ever brings a policeman after me again I'll—kill him!"

His mother shrank in horror from his rage-distorted face. Conscious of the need of some new tactics for this turn in the situation, she broke forth in entreaties, in lieu of reproaches.

"You've been such a good boy always," she said piteously, "and now—oh! what has come over you, Ellis? I know they've given you something to drink. You're not like yourself, you're—"

"Is there anything else you can accuse me of?" raged the boy.

The remnant of his self-control was fast leaving him. He felt suffocated with indignation.

"Get out!" he cried fiercely, yet with an undertone of appeal she would have done well to heed. "Don't you see I can't have you here? I—I wish I could swear!"

His mother shrank as from a blow, and fled wildly out of the room. In the hall she met her husband just coming in from a fruitless search for his son.

"Pa," she said, in a loud whisper that carried readily to the boy's ears, "he's here; but he's not himself. I know they've doped him."

With portentous solemnity Mr. Pyke walked into his son's room. He was of the substantial, middle-west variety of citizen, and he wore the look of one bent on doing his duty at any cost. He spoke with measured scorn: "To think," he said slowly, to let the words sink in, "to think I have a son who would want to run away with a low-down circus." With these words he walked majestically out. At a less tense moment he would have appeared ridiculous.

Mrs. Pyke went timidly in as her husband went out. Her heart ached with terrified apprehension. Her frightened eyes anxiously scrutinized the locks and the window fastenings, and searched for every possible loophole that might offer Ellis means of escape. Mechanically her nervous fingers turned the key back and forth in the lock of the inner door.

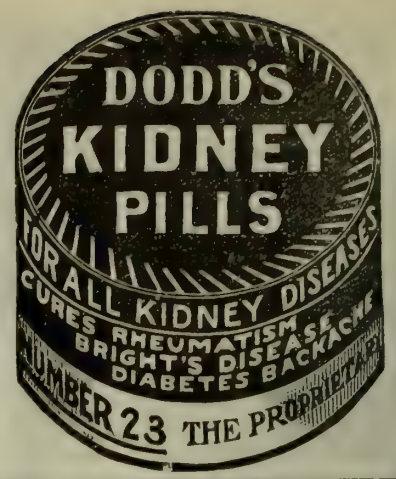
The boy's eyes were almost murderous as he watched her. He had been brought up to respect his mother, and he strove now to hold his peace.

She caught his look, and fresh terror assailed her. Impotently she fell back to her appeals and reproaches.

The veins in Ellis' neck began to swell. With a fierce gesture he ripped open his collar, and then, as if loosened from confinement somewhere in his throat, a torrent of cursing burst

BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.



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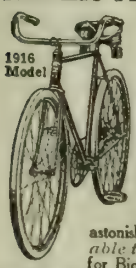

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from his lips. He remembered the oaths of the hired men on his father's farm, and used them with horrible proficiency.

His mother screamed and ran from the room. Never before had she heard Ellis swear. The little girls awoke and added their frightened weeping to the general confusion. In all that hysteria there was not one sane note.

Ellis listened in grim silence for a moment, then unbolted the outer door and flung himself out into the night.

"I'll go yet," he raged, with another oath. "I can't stand it here another moment."

Just then Miss Rossiter came around the corner of he house. She was their "roomer," and Ellis recalled her existence with a distinct shock. No doubt she had come to deliver her lecture now. He felt a new sense of desperation. Of course, she had heard the whole of the miserable fracas. She had always been a good sort, a comrade and friend interested in his rabbits and banty chickens. It was hard to have this new ordeal forced on him after all the madness he had just gone through. He wheeled sharply, intending to go out by the back gate and thus escape it, when a quiet voice, wherein was no trace of excitement, halted him.

"Is this your little dog?" the voice inquired tranquilly.

A sane note at last! Ellis felt a vast relief and an immediate response to that note. The effect of her words was as instant as a pail of cold water on a drunken man. He stared at the little silken-haired dog for a second, and sanity and reasonableness returned in a breath.

"Why, it's the little circus dog! He must have followed me home. Where did you find him?"

There was a note of confusion in the last sentence, but Miss Rossiter did not seem to notice.

"Isn't he a beauty?" she asked, stroking his black coat. "Don't you think we ought to fix him a bed somewhere?"

Ellis eagerly assented. Action was the one thing needed. He could work off what he now had no desire to swear off.

Miss Rossiter became conscious of an anxious white face watching them from Ellis's bedroom window. She shook her head warningly while Ellis's back was turned, and went on helping to put the circus dog to bed, chatting cheerfully over the task.

To talk on any but the subject was vast relief to Ellis. There was an undercurrent of gratitude toward Miss Rossiter in all he said.

"This moonlight night is swell, isn't it?" he asked, in an eager effort to express his relief in some way. Miss Rossiter assented enthusiastically.

The box that Ellis brought was fitted up with the piece of old carpet that Miss Rossiter found, and the little circus dog crept wearily and gratefully into his bed. Ellis reached in and pulled his silky ears. The little creature licked his hand affectionately.

"How he loves you!" exclaimed Miss Rossiter.

Ellis experienced a sense of gratitude and humility. It was a little hard to understand how even a circus dog could love him, after the horrible outbreak of the past hour.

"Well, I think he's comfortable now," said Miss Rossiter, turning away, "and we'd best turn in, too. You get up early, don't you? You'll need your sleep. It's near two o'clock, I judge."

"Two o'clock!" Ellis started guiltily. She had been kept up, too; and his mother—. Her white face recurred to him now, with a stab of remorse. He walked silently in the direction of his room door.

"You'll keep the dog, Ellis?" interrogated Miss Rossiter.

Ellis nodded. "The circus is gone now," he explained briefly.

"He'll be a good friend to you. A dog is very loyal."

"You bet he is," enthusiastically assented Ellis.

"And, Ellis"—Miss Rossiter paused a moment as their ways separated—"a show that even a dog runs away from is pretty rotten, don't you think?"

"Yes, I do," answered Ellis. And Miss Rossiter said nothing more at all.

Her progress up the stairway was arrested by the sight of a white face in the hall.

"Will—will he stay?" appealingly inquired Mrs. Pyke.

Miss Rossiter paused a moment, moved with pity for the overwrought mother heart; but there was something to be said, and she must not shrink from the task.

"He will stay if you quit talking."

She leaned over the banister and turned down the light. The balm of darkness descended on the troubled household.

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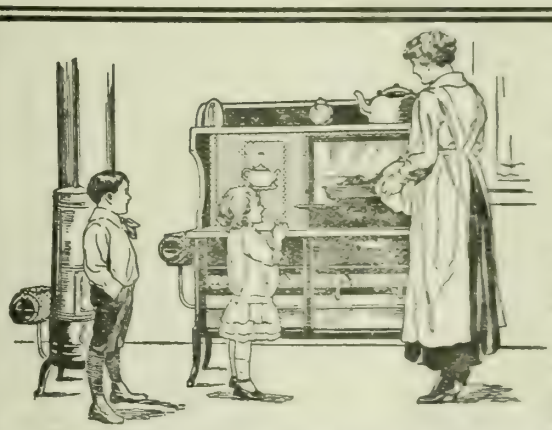
We set plants in the garden as early as possible, and if a cold spell follows we cover them with glass fruit jars, which protects them from frost and chilling winds. Let the cans remain until the weather warms up, but keep a sharp watch on warm days, for there is danger of scalding the plants. Quite often we take the cans off in the morning on warm days, and put them on again at night.

We break our ground in the fall, loosen it up well in the spring, and set the plants three feet apart. Give a liberal dressing of chicken manure around the plants. We train each plant to a stake, and break out most of the suckers, which hastens the growth of the fruit.—Rosetta McGregor.



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PERSONAL HYGIENE

Hygiene is that department of sanitary science which treats of the preservation of health of the household and community. By personal hygiene I refer to rules for the promotion of individual health. It is the art of keeping the body clean and sanitary. A well-washed face and hands free from grime have an aesthetic value, but cleansing our exposed parts has little effect upon health, if we swathe our bodies in filthy underclothing and allow the skin pores to become clogged with a mixture of dust, lint from the garments, and oily matter from the sebaceous glands. The skin is filled with thousands of small openings or pores from which comes an oily secretion. If this is allowed to accumulate the ends of these pores stop up and the skin becomes coarse and pitted or rough.

Transpiration of the skin is no less important than the process of breathing, or keeping the bowels active. Each of these functions carries waste out of the body. The skin excretions are just as important as the kidney secretions. Do not confuse this oily matter of the skin with sweating. It is entirely different. Perspiration assists in lowering body temperature during exercise. It is a cooling process. If the sweat washes away, as it may, the oily waste from the pores, it is well and good; but if we are to depend upon this means of keeping the body clean we must sweat more and change the underclothing frequently. Even at best it would be a poor makeshift for a daily bath.

The Bath Is Coming

Bathing in some country homes is difficult because of lack of facilities. Bathrooms are not yet to be found in every farm home. But the bath is coming! Not because the country is aping the city, but because country people are learning that much bathing is necessary to good health and the pursuit of happiness. They are learning that by right living they can keep the doctor away. The day is not far distant when laws will control sewage disposal on the farms as they do now in towns and cities, and with this change will come better arrangements for bathing. Nothing is more offensive than a sweaty, unclean body.

The "old swimmin' hole," with all its terror for loving mothers, is a blessing in disguise. And shortsighted indeed is the parent who does not encourage, and in absence of something better, does not personally lead his promising brood to the "deep hole down in the meadow" during the harvest twilight for a refreshing dip, or "a dive to bring up gravel."

Toilet articles should be individual. There is no justification for a common towel. It is a great menace to health and a more likely distributor of germs than the common drinking cup. Each member of the family should have his or her own things for the toilet, and use them daily. Never retire for the night without the body being prepared for the recuperation of the night's rest. After a hard day in the dust and dirt a half hour of face washing, tooth brushing, and throat gargling, with a bath and a rub with a coarse towel, and a change from the sweaty work clothes to a clean sleeping garment, would add more in physical vigor, good health and contentment of mind than any other change that could be made in country living.

For cartarrh of the head, the nose should receive daily attention. The nasal douche is suitable for home use. Use a mild alkaline solution, pouring or snuffing it up the nose.

Care of the teeth is very important. Decay is hastened by decomposition of food which has lodged between them. This affords a suitable place for the growth of many kinds of germs. If you will run your tongue around your teeth you may feel a rough scurf covering them. This roughness is a deposit from the saliva, in which are growing untold numbers of microbes. How offensive is the breath from an unclean mouth with decayed teeth! And what wonder that we suffer from indigestion and stomach trouble, when food, thoroughly mixed with these germs, passes from such a mouth into the stomach! Cleanse the teeth frequently with a brush and tooth paste or wash. This will arrest decay, and by keeping the decayed places filled will postpone the day of "store teeth." Good teeth that can grind the food will assist digestion and do much to preserve a well-nourished body.

To civilized man the mouth is most sacred. By it we measure our ideals of cleanliness, and each one of us regards our own mouth as being clean. Yet many a one uses his mouth as a third hand, and will hold in it such things as pencils, strings, nails, gloves and even money—in fact, any and everything goes into the mouth. It is a common receptacle, a catch-all, and a convenience. Can you imagine a more desirable way to infect your system than by placing these germ-carrying things in the mouth? And because of this common receptable use, our mouths become a source of danger both to ourselves and to the community, by contaminating things which others handle, and in turn hold in their own mouths.

Although the mouth is the entrance for sustenance into the body, it is also a means of exit for coughing and spitting. Spitting is inexcusable. It is a habit for which there is no defense. It is an insult to society, an imposition upon your fellow man, to expectorate along the streets and highways, where it is impossible to avoid contamination. Laws can do much to correct this habit, but the great good must come through the education of the young. Teach the girls and boys to NOT SPIT!

Cleanliness Next to Godliness

The use of chewing tobacco, which is a mouth habit, can easily become disgusting and dangerous. Since tobacco juice must be gotten rid of, it requires spitting, and spitting for any purpose cannot be reckoned as a refinement. Perhaps tobacco chewing could be accomplished in a pleasing, sanitary manner—but why chew at all? Other than poison the body, what does it accomplish?

Uncouth habits are hard to get rid of. Culture does not necessarily accompany cleanliness. It matters little whether you eat mashed potatoes with your knife or fork, so long as you do not eat like a "swine herd." Tin plates can be kept just as clean as Haviland china. To be cleanly does not require that you be a fop.

Personal hygiene is important since it is the basis of our aesthetic tastes. Upon these ideals we build our habits. If by precept and early training our personal habits are filthy, so will be our home surroundings throughout life. If the father "kept the pig in the parlor," why should not the son do so, too? If mother taught her daughter to keep herself tidy and to bathe daily, most surely will that girl teach her own daughter to do these things. So then we turn to the young people, to the girls and the boys in the schools, in an appeal for better living and better training in how to live; for more healthful habits and better care of the young bodies; for better personal hygiene.

"Just as the twig is bent the tree inclines," and so too will youth-formed habits of personal cleanliness cling to us until we are robbed of our reason by a second childhood.—Dr. Julian Clarge, in Exchange.

THE ART OF SEASONING AND FLAVORING

To know how to properly season and flavor the various dishes cooked is an art, and one that is learned almost wholly from experience, practice, and experimenting. Even in the use of such common things as salt and pepper one must learn from experience the proper amount to use or the food will not be edible.

The object of seasoning and flavoring our food is to give it a pleasant taste. We are so constituted that we cannot enjoy anything if it is used in excess. So the wise cook uses only just enough seasoning or flavoring to make one long for more.

Every herb as well as flavoring has a definite place in cookery. This makes it possible to season the various dishes prepared so they will not all taste alike.

The home-grown herbs are better than those bought in cans. So if at all possible, grow your own herbs.

Sage is commonly used in seasoning dressings and sausage, but if a leaf or two is minced fine and sprinkled over the roast pork it will give a new flavor to it which is a pleasant change. Sage should never be used in dressing that is to go in a baked fish or oyster dressing, as it kills the flavor. A tiny bit of Marjoram and basil or savory, thyme and balm can be added to the dressing for fish instead of sage. Sage is also used with goose and duck, as these are among the heavy meats.

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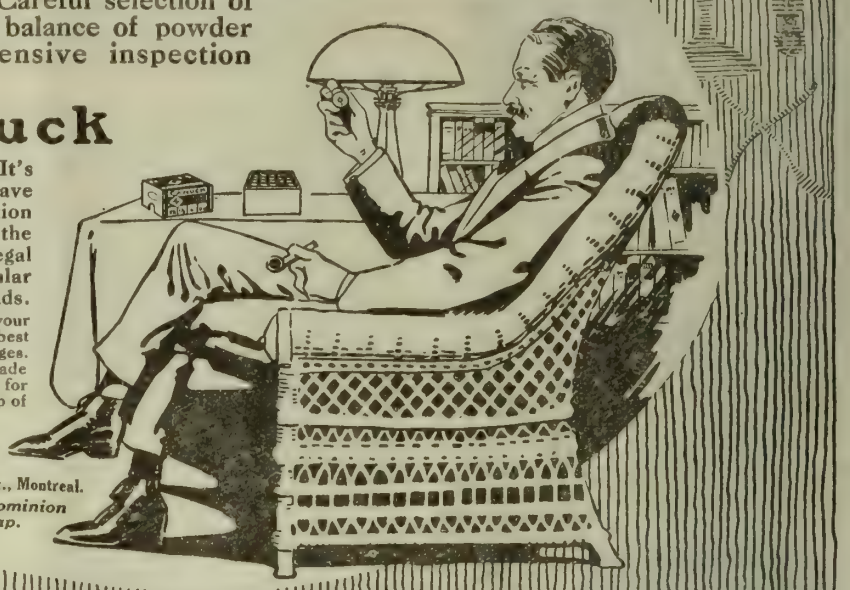

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The Maritime Provinces

Summer Tourist Travel

The United States railway authorities are expecting a big tourist travel to New England resorts this year, and advance many reasons for their optimism in this respect. They cite the facts that war conditions have closed the door to European resorts, that the San Francisco Exposition, which last year led thousands to spend their vacation on the Pacific Coast, is over, and that the extraordinary prosperity in the United States has provided many people with ready money for extended trips. Another indication is the large number of requests received for summer literature. The numerous inquiries received by the Canadian Government Railways is a sure index that great interest is being taken in the summer resorts of the Maritime Provinces, and all its principal passenger representatives in the United States and Canada have been provided with a large supply of 1916 descriptive literature.

With the unlimited possibilities that Maritime Canada possesses for summer enjoyment—conditions as enjoyable as those in the most favored part of the world that may be chosen for comparison—sunny skies, delightful temperature, invigorating air, an endless variety of picturesque beauty—nature evidently intended the "provinces by the sea" to be a land for recreation.

The value of summer tourist business to the New England states is estimated in the millions. Now is the time for our Maritime people having accommodation for summer visitors to put their houses in order advertise the fact at home and abroad, welcome the stranger, and reap the golden harvest.

The fresh leaves of Marjoram and basil or savory, thyme and balm can be minced and sprinkled over a planked or broiled fish, or they can be chopped fine and added to eggs for an omelet.

"Sweet herbs" include sage, balm, Marjoram, basil, summer-savory, chervil, and thyme.

Our grandmothers knew the secrets and just how to use the various herbs. They can give many suggestions that are not found in all the newer cook books. Grandmothers often speak of a "bouquet of herbs" for this or that purpose. These are usually made of Marjoram and basil, which have a clover-like flavor. Savory, thyme, and balm are similar in flavor. They used these largely in pot-roasting and in baking fish. The bouquet is lifted out along with the meat, but is never brought to the table or left in the pot while the gravy is made.

Often a "bouquet" of herbs is added to the soup kettle. In this way the flavor is imparted to the stock, and the herbs are not scattered through it.

To make the bouquet, simply tie the desired amount of herbs together firmly with a sting, so they will not come apart in the pan or kettle in which they are placed.

While sage is best suited to heavy meats such as pork, sausage, goose, and duck, it is also used in the more delicate meats as chicken, turkey, etc. For a change, substitute Marjoram, savory, and thyme, as they are more delicate in flavor and go well with these meats.

The salar herbs are parsley, chives, chervil, burnet, and tarragon. Chives have a mild flavor of onion, chervil a pleasant pungent taste, burnet the flavor of cucumber, and tarragon of vinegar. Parsley is an old-time favorite, and its use is well known to almost every one.

Chives are also useful in making fillings for sandwiches, or they can be minced and sprinkled over a steak or roast beef, or in a stew, or in the gravy, or with the yolks of stuffed eggs.

Horse radish goes especially well with beef. In the spring the young tender leaves are used for greens. In the fall the roots are at their best and they can be dug and grated and packed down for winter use. To every pint of vinegar add a tablespoon of sugar and one teaspoon of salt. Pack the grated horse radish in wide-mouthed bottles and cover with vinegar.

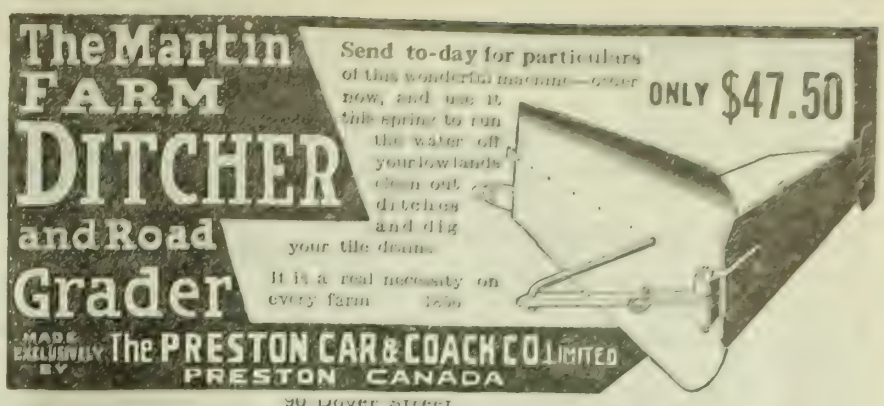
Often it takes only a tiny bit of grated onion to give a new taste to the soup stock, or gravy, or a stew. Celery seeds are a delightful addition to braised meats and fowls. A sprinkle of paprika over the dish of mashed potatoes makes a pleasant change from black pepper. The paprika is a sweet pepper, so that one need not be afraid of it.

Vanilla is the standby in flavorings. A few drops will improve the chocolate cake or icing, or the straight chocolate when made into a drink. Nut cake an bread are improved with a few drops of vanilla. One can also add a little grated nutmeg with it to nut-loaf cake.

Vanilla and almond go well together. The cake can be flavored with one and the icing with the other. It is all learned by experimenting with first one and then the other until one has fully learned the art of seasoning and flavoring.

A friend who had to be economical told of a very inexpensive cake recipe she used in making nearly all of her cakes, but she never used the same flavoring twice in succession. That was the reason her family did not tire of it.

One will make some mistakes in carrying out these experiments, but on the other hand, many combinations will be found that are so delicious that the mistakes are looked upon as a blessing in disguise. Do not be afraid to try new things.—Margaret Palmer.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A COUNTRY BRIDE'S CLOTHES

A pretty country girl with a rich father was getting ready to marry a young man who had not much money. They were going to start for themselves on a rented farm. The girl was used to the very best clother money could buy, and every one expected to see something very stylish and expensive when her wedding clothes were worn. But she amazed them all by choosing an inexpensive outfit that might have been worn by a bride with one-tenth her possessions.

Her wedding dress was a pretty white one that could be used for best in summer two seasons She was not going to take a wedding journey, as the young farmer could not afford it, but her "going away gown" from the old home to the new was a blue jacket suit bought to last for spring and fall for at least two seasons. Her hat, gloves, shoes, and all accessories were dainty and new and pretty, but they were not extreme. Her undergarments were sensibly made and trimmed, and she had not too great supply of them.

In house clothes she had a good supply, and all the materials were of the best. Her pretty percale dresses were as daintily made as for best, and the aprons were of the very best and prettiest material and style to be found. Shirtwaists, dressing jackets, a warm and a thin kimono, dusting caps, afternoon blouses, and all were pretty, sensible, and likely to last a long time and hold their color. A warm sweater, several scarfs, handkerchiefs, and all the things a country woman needs were in the collection, as well as the dainty bits of neckwear and fancy aprons young women wear at home and at socials.

All her old clothes had been furbished up and cleaned, so that they would do for second best, and of course such articles as furs, bits of jewelry, slippers, and other gifts from home were taken with her. Aside from the natty suit and wedding dress, she had but two other dresses that were new. One of hese was a pretty soft silk, made so that it could be used with high or round neck, as occasion demanded, and the other was a serviceable cloth skirt with several shirtwaists, one white and the other a silk to match.

I could not but think of another bride who married a young tenant two or three years ago, after a "big" wedding that her father could ill afford. She was dressed in white silk for the ceremony, and went away on a short journey in an expensive suit. Her outfit consisted of underwear heavily trimmed with expensive laces and embroideries, flimsy silks, extreme styles in gloves, millinery, and shoes, and five perfectly useless dresses that were out of style in a year.

For a city bride who was to entertain and visit much the outfit would have had its good points, but for a farm tenant's wife it was out of place entirely. She needed a raincoat, a sweater, a sufficient supply of house dresses, a warm hood and scarf for driving, a heavy blanket or bathrobe for wear in a cold house in emergencies, a kimono, a knit shawl, a pair of warm slippers, and a dozen and one other essentials for which there was no money when the stylish dresses and hats and shoes were paid for. The price of the "big" wedding and the useless clothes would have supplied her with everything needed, and left a nice little nest egg for emergencies. But she could not see it that way. As the dresses were made in the scanty style of several years ago, they are now worthless, of course.

So I feel reasonably sure that the girl with the plain, almost scanty, outfit will enjoy wearing her things more than the other bride, and will keep healthier and more content while doing so.—Hilda Richmond, Ohio.

HOT THINGS FOR SUPPER

Alice Smith and her mother were talking about rice when a friend came in who had once travelled in far Japan.

"It's no wonder Canadians don't care for rice. They so seldom cook it in any way but the soaky pudding way, add an egg or two, and think it's perfect," the visitor remarked.

"Well, tell us how they cook it in Japan," Alice exclaimed.

"Why," said their visitor, "I shall be glad to tell you. It's very simple, too."

"I'll just get my own Cook Book and pencil, and write down what you tell me, so wait a minute," said Alice.

So she did, and the three settled down to talk "rice," and this is what Alice wrote in her cook book. You remember her recipes had numbered up to 24, so next she put down:

25. Japanese Rice.—Use boiling salted water, and pour it over the rice, using only enough to keep it from burning. Cover tightly, and let the pot sit in a moderately hot place for about ten minutes. If it seems to stick, shake it, do not stir. When nearly done, remove cover to allow the moisture to escape. You will find the rice has separate kernels.

Rice contains so much starch that it spoils it to overcook it. It soaks up moisture just as soon as it is done. You know how careful you are to drain your potatoes just the minute they are oft enough to push a fork in easily. You know you do this because experience has taught you that longer cooking will make the potatoes soggy. Well, it's just the same with rice. Be very careful to drain the water off when the kernels are soft.

26. Rice Boiled in Water.—Take a very large kettle of boiling salted water. You should have about four times the water you have of rice. Drop the rice in and let it boil, uncovered, for fifteen to twenty minutes. Keep testing it, and as soon as the kernels are soft pour into a colander to drain all the water off, shake, and let steam a few minutes on the back of the stove.

Rice cooked in either way, 25 or 26, will be enjoyable as a vegetable. Use instead of potatoes with meat, gravy, etc.

Had Dyspepsia.

Says: HE NEARLY TURNED UP HIS TOES.

Burdock Blood Bitters CURED HIM.

Mr. H. N. Manderson, Stettler, Alta., writes: "About twenty-five years ago, in the Province of Quebec, I came pretty near turning up my toes with dyspepsia. A cousin of mine persuaded me to try Burdock Blood Bitters. In about two weeks I could eat anything from raw fat pork to unleavened bread. Three bottles did the job, and I have never been troubled with my stomach since. You would say that this is wonderful if you could only see what we sometimes have to live on in this country; bannock, half cooked beans, etc."

Burdock Blood Bitters has been on the market for the past forty years, and cannot be excelled as a medicine for all diseases or disorders of the stomach.

B.B.B. is manufactured only by The T Milburn Co., Limited, Toronto, Ont.

CARE OF HOUSE PLANTS

By Margaret Palmer

In order to receive the best results from a variety of potted or house plants, each plant must receive the right amount of light, water, soil, and the care suited best to that particular specimen.

Potted plants should be examined every spring and fall to see whether or not the plant requires re-potting. This is done by holding one hand over the top of the pot and tapping the edge of the pot with the other hand. If the earth around the plant is moistened, this tapping will loosen the plant from the side of the pot, and it is then easily slipped off.

If the earthy ball is found completely covered with roots, the plants need re-potting at once. Sometimes the plants need to be re-potted into a larger size as soon as its present pot gets full of roots, but no sooner. The growth will be much quicker if a pot a size larger is used each time, as from a 3-inch pot to a 5-inch pot, or from a 5-inch pot to a 7-inch pot, and so on.

The roots of many plants lie dormant during the winter months, and should not be disturbed during this period, which is one reason for re-potting in the spring.

The earth used for house plants should be prepared from one spring to another. This is done by using one part compost (cow or sheep manure), one part rich loam (good turf), and one part sand. This is mixed together in the spring and allowed to rot until the next spring. It should be stirred two or three times during the summer.

Good decomposed leaf mould is a very good substitute to use in place of the compost where one has no earth prepraed ahead.

One of the great enemies of house plants is coal gas. The slightest trace of the gas will retard the growth of new leaves.

Nothing will brighten and freshen up house plants like a bath. The water removes the dust and opens up the pores. This can be done at least once a month. Place as many plants as possible, without crowding, in a wash tub. Then use a small sprinkling can or a whisk broom to do the washing. A soft, dampened sponge may be used to wash the dust off of leaves on which it seems to stick or that the sprinkling will not remove. Use water that has the chill removed. The temperature should be about the same as that of rainwater in summer.

Some plants need watering every day, while others require water only every two days. If the leaves turn yellow and drop off, it is a pretty safe indication that the plant has been watered too much.

No rule can be given for watering plants. My own I always water from the top and not any more than what the plant and earth will absorb each time. If the water is poured into the saucer or the jardiniere in which the plant sits, it is apt to cut off the roots' supply of air, which is injurious to any plant, as it must have air as well as water, sunshine, light, and the right temperature.

Keep a vessel of water on the stove or register to supply moisture.

Geraniums are, perhaps, the best known and, on the whole, the easiest to keep of the various varieties of house plants. Give them as much sunshine as possible, for they will bloom in winter when all other flowers fail.

Ferns, palms, rubber, and cacti plants require special care and handling. The same is true of begonias, fuchias, ivy, umbrella plants, etc.

Ferns require a strong light to do their best, but will grow fairly well with only a little sunlight. As we think of ferns growing in the woods, we are apt to think they require no sunlight, but it is not so with the different types which come from the florists. They are raised for indoor culture, and must receive sunlight and just enough water to keep them moist. If they are kept too wet, or allowed to go bone dry a few times, it will be the ruination of the fern, for they cannot thrive under such conditions.

Hanging baskets and window boxes require a window with plenty of light and sunshine.

All dead and withered leaves should be removed from the plants at once, as well as blossoms.

If the plants should get frosted during the night, as soon as the discovery has been made remove them to a dark room where the temperature is just above freezing. Sprinkle a heavy shower with very cold water. In many cases this will save the plants where they have not been allowed to thaw. Many of the tender plants have been saved in this way.

The frost must be extracted gradually, allowing no heat near them, keeping them away from light and warmth for three or four days. If the tops wilt

Calls Them One of Her Best Friends

DAME BELANGER TALKS OF DODD'S KIDNEY PILLS

Tells How They Cured Her Rheumatism and Made Her so Well She Could Work Wihout Fatigue.

St. Amateur, Gloucester Co., N. B.—June 8th (Special).—Cured of rheumatism, from which she had been a severe sufferer, Dame Pierre Belanger, well known and highly respected here, is telling her friends that Dodd's Kidney Pills have made her well.

"I consider Dodd's Kidney Pills one of the best friends I have," Dame Belanger states. "I had rheumatism and the pains in my limbs caused me a great deal of suffering.

"I took six boxes of Dodd's Kidney Pills, and they made me well. My pains are all gone, and I can now work without being fatigued. I will always keep Dodd's Kidney Pills in the house."

Dodd's Kidney Pills cure rheumatism because it is caused by sick kidneys. Rheumatism is caused by uric acid in the blood. If the kidneys are healthy and doing their full work they strain all the uric acid out of the blood, and there can be no rheumatism. Dodd's Kidney Pills always make the kidneys well. They take away that tired feeling by ensuring pure blood and good circulation.

"Good News for Farm Women"

Orange, N. J., March 1, 1916

Dear Mrs. Dairywoman:—

The bearer of good news is always welcome; and I have some very good news for farm women. We've a new separator at our house and it's a wonder.

One splendid feature of this new invention which must have been planned with the comfort of the dairy woman in mind is the knee-high supply can. This does away with the hard, high lift no woman should be asked to endure day after day. It's only a few inches to lift and a tilt of the pail, even for a small boy. This is *one* item of good news.

Cleanliness is the beginning, middle, and end of good dairy work. You know how quickly the separator shows the effect of any slight letting up in this direction. With dishes to wash three times a day, cooking utensils, calf pails, milk pails, etc., a big pile of separator disks is just about the "last straw", isn't it? But with our new Sharples there are only three pieces to clean, not one heavy, bulky, or fussy. This is the *second* piece of good news.

Formerly, a slight slowing of speed in turning the handle of the separator meant a loss of cream—and money. One's attention had to be strictly on turning the crank at an unvarying high speed, which was trying to both mind and strength. My *third* and best piece of good news is that

THE NEW SHARPLES SUCTION-FEED

Separator draws up into the bowl just the right amount of milk—always in proportion to the separating force. If you feel out of sorts, you may turn slowly and the bowl will drink up just enough milk for clean skimming and no more. If you feel spry and want to get through to sew, to trim a hat, or to visit a neighbor, turn as fast as you please and the bowl will take up proportionally more milk, yet the cream will be of the same thickness. Smooth, even cream, such as the Suction-feed gives you makes quality butter that brings top prices.

The separator has only one thing to do while you have many tasks. The separator has always been a tyrant which insisted on being turned at regulation speed, whether you were well or ill, worried or happy, rested or worn out. But this new Suction-feed Separator ***meets your moods.*** Its speed is your speed and yet, it ***gets all the cream all the time.***

Why don't you drop a postal to the Sharples people for their new book? Then, you can show your husband that this new invention will be a money saver for him as well as a labor saver for you.

Yours truly,

A Dairywoman

What this farm woman says in her letter is absolutely true. There are many other pieces of good news in our new book, "Velvet" for Dairymen, which fully describes this wonderful separator. Send for your copy today. Address Dept. 79

The bowl is easy to wash. There are only three parts, and *no disks.*

The Sharples Separator Co.

Toronto - - - - Canada

after the frost has been extracted, that portion of the plant is beyond saving, and should be removed. Cut below the part affected, so that there will be no danger of decay setting in and ruining the remainder of the plant. If the whole plant wilts, cut down, and in many cases new shoots will start. This is well worth the trial when a favorite plant has been nipped.

A good protection for plants where there is danger of frost is to protect them with newspapers. Remove them from the windows to a box lined with newspapers, set a lantern inside, and cover the top with newspapers, leaving a small air hole so there will be no danger from fire.

In very cold weather, water the plants sparingly, and in the morning.

GRANDMOTHER'S ALPHABET

Always be cheerful and patient as well as industrious.

Brooms hanging instead of standnig will keep them soft and pliant.

Canning—do in early part of the season and early part of the day to save fruit and temper.

Dish of hot water set in oven prevents cakes from scorching.

Economize time and health and means, and you will never beg.

Flour—keep cool and dry and securely covered.

Glass—clean with a quart of water mixed with a teaspoonful of ammonia.

Happiness is not so much in doing what you want to, but in wanting to do what you have to.

Ink stains—wet with spirits of turpentine; after three hours, rub well.

Jars —tokeep cereals in good condition, always put in glass jars. To prevent jars in the family, always bring a smiling face to the breakfast table.

Keep an account of all supplies, with cost and date of purchase.

Love lightens labor.

Money—count carefully when and where you receive change.

Nutmegs—prick with a pin, and if good oil will run out.

Orange and lemon peel—dry, pulverize, and keep in corked bottles to use for flavoring.

Parsimony—be careful lest what you call prudence and economy is really this.

Quicksilver and white of egg destroy cockroaches and bugs.

Rise in the morning full of gratitude for the new day.

Sunshine within and without is the best medicine.

Try again, and conquer all obstacles.

Undue haste makes waste.

Vinegar never catches flies, but honey does.

Wholesome advice is easy to give and hard to take.

Xantippe is not a character to emulate.

Zest is the secret of success.

A SIMPLE TRUTH

Marvin L. Piper

Loog for flowers only
All along the way,
And you will surely find them
Every passing day.

Look for weeds and briers,
And you will find them, too,
All along your pathway
'Neath the ether blue.

'Tis a truth most simple—
Just bear it in mind;
Whatever you may look for
You will surely find.

KITCHEN KINKS

The rubber rollers of a clothes wringer can be cleaned with kerosene; then rinse off with warm water.

Matting should be cleaned with a cloth dampened in salt water.

Fabrics colored with analine dyes that have faded may be restored by sponging with chloroform.

THE right kind of flour makes the right kind of Bread.

With REGAL FLOUR you not only get quality, but you get quantity as well.

THE ST. LAWRENCE FLOUR MILLS COMPANY, LIMITED
MONTREAL

Production and Thrift

CANADA'S CALL FOR SERVICE AT HOME

Produce More and Save More

The Empire needs food. If you are not in the fighting line you may be in the producing line. Labour is limited—all the more reason to do more than ever before. Grow food for the men who are fighting for you. The Allies need all the food that you can produce. Every little helps. You are responsible for your own work. If you cannot produce as much as you would like, produce all you can. Work with the right spirit. Put fighting energy into your effort and produce now when it counts. The more you produce the more you can save. Producing and saving are war-service.

Make Your Labour Efficient

In war-time do not waste time and energy on unimportant and unprofitable work. Economize labour. Put off unproductive work till after the war, and, if possible, help in producing something needed now. Let us not waste labour. Canada needs it all. If possible help to feed the Allies. Make your backyard a productive garden. Cultivate it with a will. Make your labour count for as much as possible.

Do Not Waste Materials

There should be no waste in war-time. Canada could pay the annual interest on her war expenditure out of what we waste on our farms, in our factories, in our homes. Every pound of food saved from waste is as good as a pound of increased production. The way for a nation to save is for every individual to save. France is strong to-day because of thrift in time of peace. The men and women of Great Britain are not only "doing" but are learning to "do without."

Spend Your Money Wisely

Practise economy in the home by eliminating luxuries. Wasting our dollars here weakens our strength at the Front. Your savings will help Canada to finance the war. Save your money for the next Dominion War issue. There can be no better investment.

THE GOVERNMENT OF CANADA 5

THE DEPARTMENT OF AGRICULTURE THE DEPARTMENT OF FINANCE

Clean to handle. Sold by all Druggists, Grocers and General Stores.

REDUCING FOAL MORTALITY TO A MINIMUM

(Continued from page 559)

is required to loosen attachment. If not born within three hours, death will result. As soon as foal is delivered the sheet covering it should be broken, if not broken previously, and the foal left to itself for a few minutes to rupture the navel cord. This is a natural process of nature, and the escape of blood and other liquids from it will be more certain that if a ligature were at once applied. Many cases of pyemia or joint ill, follow days after navel cord has apparently dried up. This is due to imprisoned material which is absorbed and carried through the system, from which septic infection follows. On this point pages are written and science is taxed. It is well to remember that a qualified veterinarian is required to deal with the separate serious conditions as they arise. If cord does not rupture of itself, it can be severed by holding one hand close to the white line, one inch from colt's body, to remove any likelihood of strain between your hand and the foal, and draw cord off with other hand. Should this fail, apply a ligature of strong white cord and sever with knife one-half inch below ligature. See that ligature is clean and made antiseptic by creolin or other good equivalent, and have it on hand ready for the occasion. The navel cord should have a good antiseptic applied three times a day until healing is complete. This antiseptic should be of such a nature that it will not irritate and cause the foal to bite or otherwise bruise the navel, such as tincture of iodine or strong solution of formaldehyde. If after some days navel is discharging or moist, a powder of equal parts of pulverized alum, iodoform, and boracic acid may be applied three times a day.

Treatment of the Foal

As soon as foal is able to stand, it should be assisted to nurse, and if not strong enough should be fed the mother's milk combined with one ounce of whiskey or an occasional fresh egg, or both, to which may be added a teaspoonful of brown sugar as a laxative. Delicate foals are those from which the meconium or first feces does not readily pass. This should be carefully watched; otherwise pain and colic will soon manifest itself. In cases of constipation, relief may be found in administering injections of warm water frequently, and three or four ounces of raw linseed oil, or castor oil.

Mares that are heavy milkers and not at work will generally have strong colostrum or first milk, which may produce diarrhoea or indigestion. In such cases the foal should not be allowed to get an overfeed, which may be guarded by milking the mare for a few days. In order to insure a good supply of milk for the foal, see that the mare has plenty of good, clean, warm water to drink for at least three days after foaling. Good hay, boiled oats, and bran should be fed, always being sure not to overfeed. As soon as possible, allow both mare and foal outdoor exercise so long as ground is not damp for colt to lie on. If the mare has to work steadily after foaling, see that foal gets a nurse at least every two and a half hours, but see that the mare is not too warm.

WHEN THE FIRE CRY CAME

By Allen Wylie

You've heard the cry of "Fire!" come across the fields during some storm? What did you do first of all? You looked to see where the fire was—and you instinctively turned to your own buildings to see if thin wisps of smoke were coming from them. If they were safe you breathed a deep sigh of relief and then turned to help. You probably jumped on a horse and raced to the fire to help your neighbor, but you really couldn't do much, for the barn was like so much tinder and the grain inside was fine fuel. You tried to save the stock and the implements, but you could do little. After the fire you turned to offer consolaion and any help you could give. The fire had done its work.

That's a little story which happens hundreds of times each year on our Maritime farms. Barns, filled with grain and stock, and representing the work of years, go up in smoke, and nothing is left but charred ruins.

Last year I investigated over seventy fires, andfound that all but one were wooden buildings throughout. The one had a metal roof and wood sides. Fire in this last building was caused by a spark from a threshing engine. It caught down in one corner just above the foundation. When it was discovered it had gained such headway that there was no chance to save a thing. Most of the other fires were caused by lightning.

I just received a report for 1914 and 1915, and find that in the two years 668 barns were struck by lightning. Of these 218 were a total loss. Many of the others had to be rebuilt; some were repaired. These are barns which were insured; no doubt there were many others with no insurance whatever. Besides these losses there were many barns set afire by threshing engines, sparks from house chimneys, and overturned lanterns.

A year ago I picked at random the reports of 27 fires on Ontario farms. The losses amounted to $119,000.00. I wonder just what the losses of the 218 fires would amount to? Putting the thing down in cold figures, it is appalling.

I talked with one man after his fire, and asked him why he hadn't built with some fireproof material, and he told me: "I figured that metal was too expensive and I couldn't afford it, but I guess I'm paying for it now. I haven't my crops insured, and they're all gone. It means a year's hard work all knocked to ——, and I've got to start in and build all over again. And I even lost some of my stock. You can bet your bottom dollar that I'll put metal on the next barn." His story is told to the salesmen of metal companies many times a year. The proof of it is shown in the increased number of metal-covered barns throughout the country.

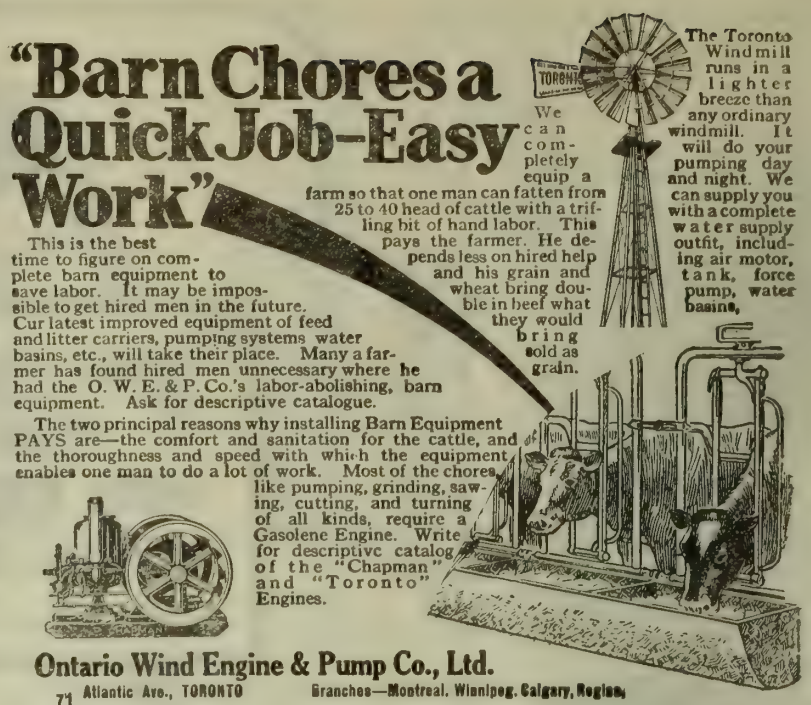
Farmers are waking up to the fact that they haven't the protection given in the cities, and they must offset that by building with fireproof materials. When John Slee, of Doon, lost his buildings by fire he immediately put up a metal-covered barn; when the entire set of buildings at the Mt. Elgin Institute was destroyed by fire they were replaced by meal buildings; when Thos McCracken of Streetsville, Thos. Curtis of Verulam, J. Baskerville of Thorndale, and many others lost their barns by fire they decided that metal was not too expensive in the long run, and they put up metal-covered barns.

Metal is insurance in itself. It is practically absolute protection from all outside fire causes. A metal-covered building properly "grounded" with wires from the corners into the ground is an absolute lightning protection. Sparks from threshing engines or chimneys can do no damage to a metal-covered building—they can drop on the metal, but they die out there.

When the Wilks stables, at Galt, burned out a couple of years ago there was a little storage shed about fifteen feet from the main barn. It was covered with metal shingles. Fire brands from the big fire rained down on it, but when the other buildings were burned to the ground this old shed was still standing. What did Miss Wilks do? She rebuilt, and she used a complete metal covering for all her buildings. She figured that wooden buildings were too expensive an investment.

I could give you the names of thousands of farmers who have built with metal because they wanted to feel sure that their crops and their stock would be safely protected from fire and lightning. They figured the cost—not from the first price standpoint, but from the standpoint of long life and protection. They did not listen to the few who kicked about price, but they investigated, and found that metal covered buildings were CHEAPER than wood in every case.

The protection afforded by metal should make every prospective building farmer sit down and think hard in making his plans. And when the time for the decision came there should be no hesitancy in choosing metal as a complete covering.


"Barn Chores a Quick Job-Easy Work"
This is the best time to figure on complete barn equipment to save labor. It may be impossible to get hired men in the future. Our latest improved equipment of feed and litter carriers, pumping systems water basins, etc., will take their place. Many a farmer has found hired men unnecessary where he had the O. W. E. & P. Co.'s labor-abolishing, barn equipment. Ask for descriptive catalogue.
We can completely equip a farm so that one man can fatten from 25 to 40 head of cattle with a trifling bit of hand labor. This pays the farmer. He depends less on hired help and his grain and wheat bring double in beef what they would bring sold as grain.
The two principal reasons why installing Barn Equipment PAYS are—the comfort and sanitation for the cattle, and the thoroughness and speed with which the equipment enables one man to do a lot of work. Most of the chores, like pumping, grinding, sawing, cutting, and turning of all kinds, require a Gasolene Engine. Write for descriptive catalog of the "Chapman" and "Toronto" Engines.
The Toronto Windmill runs in a lighter breeze than any ordinary windmill. It will do your pumping day and night. We can supply you with a complete water supply outfit, including air motor, tank, force pump, water basins,
TORONTO
Ontario Wind Engine & Pump Co., Ltd.
71 Atlantic Ave., TORONTO
Branches—Montreal, Winnipeg, Calgary, Regina.

FALSE ECONOMY

Correspondents have advised us that fruit growers in some districts have decided not to spray this season. They presume that "prices will be so low that it will not pay to spray."

In the light of our experience of the past two years, it is surprising to find any growers holding this view of the situation. In the fall of 1914 the apple crop was large; part of the fruit was left to waste on the ground, and there was little prospect of exporting even the usual quantities. A special effort was at once put forth to extend our home market and to increase consumption. The result was that all the fruit harvested was consumed quickly, and here was a shortage in the spring months. This experience alone should encourage the grower to do his utmost to produce clean, high-quality fruit this year.

Growers, especially those in Eastern Canada, will also remember well the crop of last year. Owing to the great amount of scab which developed during a very wet summer, the percentage of No. 1 apples was small, and on account of the short crop it was thought by some than even the most inferior apples would find a market. Instead of that, the shipping of such fruit resulted in a heavy loss in most cases.

The consuming public is obviously becoming more discriminating every year, and inferior, scabby apples which a few years ago found a fair market cannot now be sold at remunerative prices. This fact was clearly demonstrated last year by the very high prices realized for the better grades and the difficulty of selling inferior fruit, except at very low prices.

We would again urge every grower to spray judiciously and thoroughly. Neglecting to do so is false economy. Better fruit means better prices. It is impossible at this date to estimate what our crop of apples is going to be, although the bloom is very heavy; but whether it be a heavy crop or a light one the grower who has clean, high-quality fruit will experience the least difficulty in marketing it.

HOGS

As is well known, hogs have reached an unprecedentedly high level—$11.65 per cwt. being paid for fed and watered on the Toronto market. The fact that, even with live hogs at this figure, shipments of bacon are regularly going forward to England will serve to illustrate very clearly the demand for that product on the British market. Without doubt Canada stands in a better position today to develop a permanent bacon trade with Great Britain than has ever been the case before. To do this, however, there must be volume of supply. There is very good reason to believe that, although prices cannot be expected to remain at the present high level, the demand for bacon, in the face of the supply that can be obtained, will be such as to hold the market in a very firm condition both during and for a considerable period following the war.

Great Britain's imports of bacon in 1915 amounted to £25,441,460. From Canada she obtained only £3,324,511. The fact that Canadian bacon has been selling at an advance of from 10 to 12s. per cwt. above American, and at not more than 12s. under the nominal quotation for Danish, illustrates very clearly to what extent Canada could increase her export trade had she a sufficient quantity of hogs to make this possible The English merchant and the British consumer will buy Canadian bacon today, quality being equal, in preference to that from any other country in the world, with the possible exception of Ireland. Not only so, but an enormous market exists also for hams, frozen pork, and

pork cuts of various descriptions. This market is as remunerative as the bacon trade, although it is not likely to prove as constant. The West is producing a great quantity of rough grain this year. As compared with wheat, it will probably be relatively low in price. It should, therefore, be a sound business proposition to breed as many sows this spring as would provide each farm next fall with such a number of feeding hogs as can be conveniently handled and suitably finished. They should, however, be so selected and mated as to maintain the approved bacon type. Unless this be done we cannot compete with Ireland and Denmark, and will lose status on the British market. The development of our bacon trade is a purely commercial undertaking ,and we must recognize that we cannot sell to the British merchant unless we give him what he wants. This granted, thrifty management and good feeding should yield a return this year which will more than compensate for all the labor involved.

NATIONAL LIVE STOCK RECORDS

Ottawa, Canada, May 27, 1916.
Editor the Maritime Farmer:

The breeding of horses has become a matter of prime necessity. Before the war commenced there was a slump in prices, owing to financial conditions and the inroads of motor power, that led to a cessation of breeding. Then the war came, with its demand for certain classes. Following the precious decline in the demand, many farmers sacrificed their mares. The result is a serious depletion and a sure scarcity.

The demand is increasing and will continue to increase long after peace has been declared. If Canada is to take advantage of the situation, the time to start in is now. There will be an assured market for foals at weaning time from mares bred now.

Not only has the wastage by reason of war been enormous, but in all the belligerent countries, not omitting Great Britain, there has either been a partial stoppage or a whole stoppage of breeding by reason of the scarcity of labor, the disturbed conditions, or entire devastation.

Whether the war lasts or ceases, there must continue an undiminished demand for horses. When peace comes there will be a long period of replenishment. Then quality as much, and even more than, quantity will be required. Hence the evident call to every Canadian farmer is to breed, and to breed to the best available, to utilize his mares for production, and to secure the immediate services of the best pure-bred sire of type in his neighborhood. It will pay.

This appeal is addressed to you with the endorsation of the various horse breeders' associations of Canada, who urge decisive action by the farmers of Canada to remedy the serious situation that has arisen.

Yours truly,
CANADIAN NATIONAL
LIVE STOCK RECORDS.
Jno. W. Brant, Secretary.
William Smith, M. P., Chairman.

A BUSY MARITIME INDUSTRY

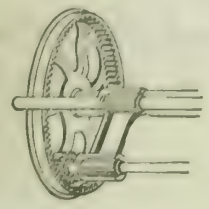
One of the very busiest industries in the Maritime Provinces at the present time is the Carritte-Paterson Mfg. Co., which has factories at Halifax and at Sydney. Their principal product is roofing material; such as Two and Three Ply Roofing, Mineral Surface Roofing, Rubber Roofing, and Tar & Gravel Roofing. They also specialize on coal tar products, and make the well-known "Tarvia" for street paving. One of the Carritte-Paterson by-products is Coal Tar Creosote Oil, the highest class wood preservative known. And in connection with this article it is interesting to learn that in the United States its sale for preserving timber is larger, measured by gallons, at the present time than the sale of gasoline for motive power which is being so much discussed by the press and public owing to the increase in cost. The use of Coal Tar Creosote Oil in Canada is becoming larger each year. This oil is used as a base in the manufacture of Velvex Single Stains, now so popular in all parts of this country. Other products of the Carritte-Paterson factories are Carbonol, a disinfectant; Creonoid, a cow spray; and Everjet carbon paint for wood and metal protection. These products are sold by the hardware and general store trade throughout the provinces, and special lierature regarding them will be sent on application to the Carritte-Paterson Mfg. Co., Ld., St. John, Halifax, and Sydney.

A Frost & Wood Mower starts to cut the moment the horses move

The Frost & Wood Mower

will not fail you

WHY is the Frost & Wood Mower light in draft? We use only the finest, toughest materials that money will buy, consequently parts need not be so heavy. In addition we use expensive-to-make roller-bearings wherever friction might occur. Heavy brass bushings prevent wear and keep driving shafts in absolute alignment. Cutter bar under quick control and goes on cutting when raised to clear an obstruction, which is a great saving of time.

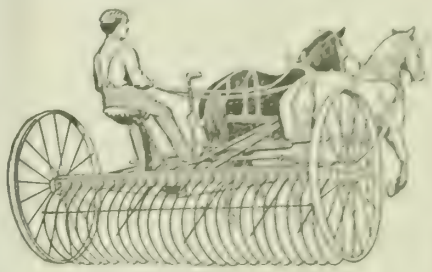


Internal drive gear gives big, quick power.

THE Frost & Wood Internal Drive Gear is a splendid engineering feat. The big driving gear wheel engages on the inside with the cutter-bar operating pinion, both wheels turning in the same direction, there is no "pushing apart," chapped cogs, loss power or jerk when starting cutting. This saves tremendously on wear and cuts repair bills to practically nothing. Levers are easily worked. In fact, it is no exaggeration to say a bay or girl can operate this machine.

Frost & Wood Rake

Here is an all-steel, practically indestructible rake good for many years of hardest service. Automatic dumping trip acts instantaneously. The teeth have high clearance and do not drag the top of the windrow. Dumps at slight pressure on foot pedal. Teeth are especially fine tempered steel, every tooth carefully tested before it leaves our factory. The Frost & Wood Rake will stand any test and has thousands of friends all over Canada.

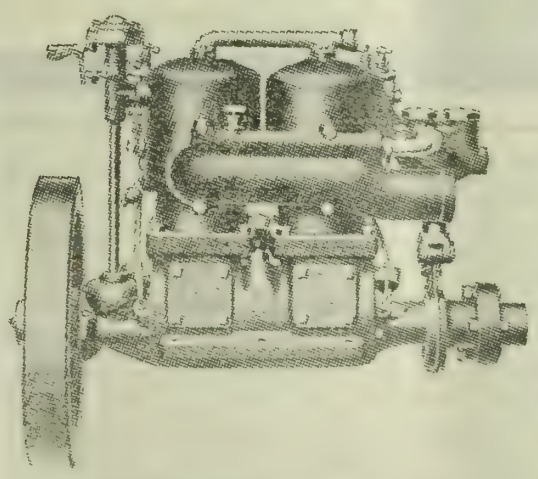


Our nearest agent can advise you on any implement need and give you folders and particulars on the above implements.

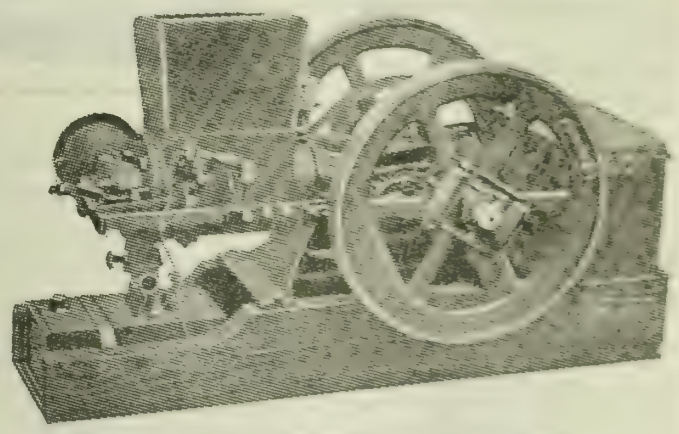
The Frost & Wood Co., Limited,

ST. JOHN SMITH'S FALLS MONTREAL

GUARANTEED ENGINES SPECIAL LOW PRICES



MARINE ENGINES, 2 1-2 to 12 H. P.



FARM ENGINES, 1 1-2 to 8 H. P.

STRONG AND RELIABLE—EASY ON FUEL

We offer a limited number of Marine Engines and Stationary Engines at special advertising prices. If you want an engine, write to us saying what work you want to do, and we will send a complete Catalogue and prices. You will wonder how they could be made for the money. Don't let a chance like this slip by you.

—WRITE TO-DAY—

THE DOMINION GENERAL EQUIPMENT CO.

Saw Mill, Woodworking, Metal Working and Contractors' Machinery. Concrete Mixers and Road Making Machinery

MERCHANTS' BANK BUILDING, ST. JOHN, N. B.

IN WRITING PLEASE MENTION THE MARITIME FARMER.

ARTIFICIAL FARM DRAINAGE

(Continued from page 557)

work, but I have no data as to their durability.

There should be as few outlets as possible for an under drain system, as here is where stoppage is most likely to occur. In some soils where there is more or less moving sand, silt basins may be necessary.

The technical work of laying out a system, size of tile for water flow, grades which will work and which will not work, and engineering difficulties that may arise can, I think, only be discussed on the field, or with diagrams and instruments when there is ample time, and I will not attempt this branch of he subject. In view of the promises of the Minister of Agriculture that he will supply men to do this work for farmers who intend to invest money in draining, this important part of the work, at any rate, is provided for, and the farmer can learn from the surveyor in his own fields.

Open Ditches and Surface Drainage

While under drainage is by far the cost satisfactory system of taking surplus water from the soil, tas it leaves no obstruction on the surface of the ground, requires but little attention for a life time if properly constructed, yet such land can be reclaimed by open ditching at much less expense. With appliances now available, horse labor can be made to do the work. There are a number of plows made for this purpose. At the Experimental Station we have one, made for the first time in Canada last season, that does very good work. Where there are no roots or boulders this plow, with four horses, will dig very satisfactorily and quickly to a depth of from 20 to 30 inches, making a ditch with a wide flare, and spreading the earth well back. Machines are also made that will work on land too soft to carry a team by using a cable and two capstans.

There are considerable areas in New Brunswick which are today lying idle that could be thrown up into ridges with wide open ditches between them, say 2 feet deep, that would produce large crops of hay for many years. On very flat land, or where there are cuplike hollows, this surface open ditching is frequently necessary to take away the surface flow even if the land be under drained. Then again there is frequently the necessity of making depressions to control the surface flow in spring and fall, especially after the ground freezes. Such depressions can be made with the plow and scraper. If a depth of two feet is necessary, the width of the depression should not be less than from 30 to 40 feet, and to this form it offers no obstruction to cultivation or harvesting.

Capital Essential

The discussion of this subject would not be complete without a reference to the necessity for some better means than available at present of securing money wherewith to prosecut drainage and other permanent agricultural improvements. Canadian banks, although willing to absorb all the farmers' savings that are brought to them and pay the generous interest thereon of 3 per cent., will not loan this same money at 7 per cent upon terms which will permit its employment for drainage or any operation giving only slow returns. Some system is, therefore, necessary for the agricultural development of this country whereby money can be obtained at a low rate and for long terms. Such systems do exist in Europe, and one reason today that Germany is so nearly self-sustaining in an agricultural sense is because of the splendid system of farmers' banking which has been in existence there for over fifty years.

It is cheering to note that in the campaign for greater production in Canada attention is being given by the Finance Minister, and to some extent by the bankers, to the need which I have stated, and if our farmers generally would express their desires in this regard the day when a system of agricultural banking would be inaugurated would be much hastened.

Some eighteen years ago the late Professor John Davidson, of the University of New Brunswick, read a paper before this Association giving the history and methods of the German system of land banks, as they were termed, and urged the value of such a system in this country; but our people were not then impressed with its importance, and I remember the only reply that I received after urging Prof. Davidson's views was from a gentleman who was the prospective heir to a quarter of a million to the effect that if I were not satisfied with the action of the Canadian banks at that time there was nothing to prevent me and four of my friends from getting a charter and starting a bank of our own. (This remark, I remember, was applauded at the meeting.)

Increased production from the farms of Canada means increased wealth for every one in the country, and in their own interests our moneyed men should be far-sighted enough to help in making agricultural development possible, and so help to build up a country that shall stand second to none on the face of the earth.

Your Kidneys

may cause DROPSY, RHEUMATISM, BACKACHE or GENERAL WEAKNESS.

Dr. Cassell's Tablets are the Proved Remedy. Take them for all Kidney & Urinary Troubles.

In these trying complaints Dr. Cassell's Tablets are of proved value. They restore perfect efficiency to the kidneys by nourishing the nerves which control kidney action, and thus enable the system to get rid of uric acid and other impurities which are the cause of Urinary Troubles, Dropsy, and Rheumatism.

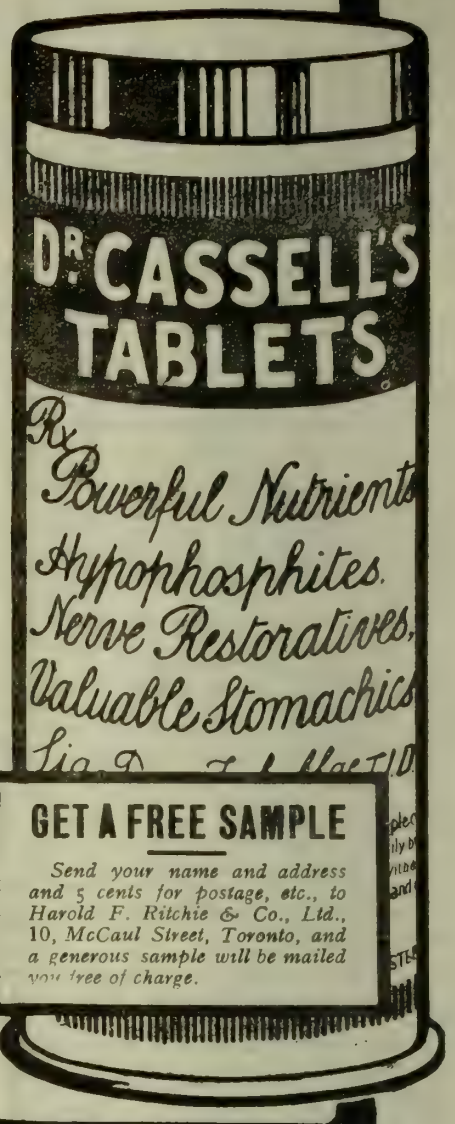
Dr. Chas. Forshaw, D.Sc., F.C.S., etc., the well-known scientist, says: "I have thoroughly tested Dr. Cassell's Tablets, and can conscientiously recommend them as an eminently safe and effective remedy for all forms of nerve and bodily weakness. My knowledge of Dr. Cassell's Tablets leads me to the opinion that the ingredients form a remarkably potent medicine, quite safe for young and old in cases of nervous prostration, debility, anæmia, loss of flesh, malnutrition, children's weakness, spinal and nerve paralysis, and many forms of stomach and kidney troubles."

Dr. Cassell's Tablets raise the vital standard of the entire system, and thus promote kidney health and general health when other means fail.

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-Spasmodic, and of great Therapeutic value in all derangements of the Nerve and Functional Systems in old or young. They are the recognised home remedy for Nervous Breakdown, Nerve and Spinal Paralysis, Infantile Paralysis, Rickets, St. Vitus' Dance, Anæmia, Sleeplessness, Kidney Disease, Dyspepsia, Stomach Catarrh, Brain Fag, Headache, Palpitation, Wasting Diseases, Vital Exhaustion, Loss of Flesh, and Premature Decay. Specially valuable for Nursing Mothers and during the Critical Periods of Life.

Druggists and Dealers throughout Canada sell Dr. Cassell's Tablets. If not procurable in your city send to the sole agents, Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto; one tube 50 cents, six tubes for the price of five.

Sole Proprietors:—Dr. Cassell's Co., Ltd., Manchester, Eng.



GET A FREE SAMPLE

Send your name and address and 5 cents for postage, etc., to Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto, and a generous sample will be mailed you free of charge.

WHEN THE FARM ANIMAL IS WOUNDED

In the past, when barbed wire constituted the great bulk of the material used for fencing purposes, wounds on the farm animals were far more common than today. Yet even now occasionally a valuable cow or horse comes in from the pasture bringing with him a gaping wound that may have been caused by any one of several things. The ability to dress this wound so that it will heal rapidly and leave as little blemish as possible is quite an asset to the farmer, or any of the family who happen to possess the required requisites. I have seen such wounds left gaping and a great blemish would result, while, on the other hand, even a single stitch would have relieved the difficulty and increased the value of the animal by a good many dollars.

The moment an animal appears with such a wound, drop other work and attend to it at once, for it may mean a saving of dollars. Act 1 is to wash the hands thoroughly. One cannot be too thorough about this, for surgery was never a pronounced success until the great English surgeon demonstrated that most of the infections arising from wounds resulted by contaminations from the hands or instruments of the operator. For the hand wash, use boiled water, adding 15 or 20 drops of carbolic acid to each quart of water. Ue a good hand brush and soap; wash the hands thoroughly, being especially careful to get the portions about the nails clean. Of course, any of the patented disinfectants are all right if used according to the recommendations of the manufacturers.

Now one is ready to wash the sore. It must be cleaned out before it can heal. Use carbolic acid water in the same proportions as in the hand wash, being sure that the water has been boiled. A cloth is so likely to become polluted that I find a cotton sponge more satisfactory. Twenty-five cents' worth of absorbent cotton will make a good many sponges and will last for a long time. Break off pieces of this cotton and put into the wash water. These may be taken out of the water, and, after using to sponge out the wound, may be thrown away. Be thorough in cleansing the wound.

In the meantime, if the cut is one that should be sewed up, and a sur-

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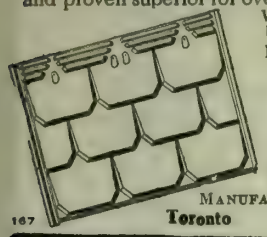

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geon's needle and hread are not at hand, do not leave the wound dangerously gaping for want of a needle. I have seen good work done with an ordinary darning needle and good linen thread, provided these were clean. If these are all that are available, put the darning needle and some white linen thread in a pie tin on the stove, cover with water, and allow to boil for about 10 minutes. With clean hands, clean sore, an dsanitary thread and needle, proceed to take as many stitches as are needed, having them about three-quarters of an inch apart, and not getting too near the edge of the wound. Leave the ends of the stitches a little long, so that they may be cut in seven or eight days with a pair of scissors. These, of course, should also be subjected to boiling. If the sides of the sore should get dry, grease them with vaseline. Remember that a healthy body is all that can heal such a gap; internal remedies are of no account in this connection. Greasing the sides of the sore will make them knit together more quickly and easily. If the sore starts to run, it may be necessary to sponge it off as often as it needs it, with carbolized water.

Especially in fly time, flies will either lay eggs in the sore or carry infection to it, and it is necessary to keep them away. The Department of Agriculture recommends he following formulas to keep flies away from animal wounds:

Formula 1—Oil of tar, 8 ounces; cottonseed meal to make 32 ounces.

Formula 2—Powdered naphthalin, 2 ounces; hydrous wool fat, 14 ounces.

Formula 3—Coal tar, 12 ounces; carbon disulphid, 4 ounces.

Mix well and apply with a brush. These are mixed into an ointment.

Remember that carbon disulphid easily turns into a gas, and so the bottle must be well stoppered. The mixture can be applied with a brush. Carbon disulphid is also highly inflammable, and so lights or heat should be kept away from it.

In the case of a very bad wound, a skilled veterinarian should be called, but many times one of these cannot be had, and so immediate action is necessary to prevent further injury to the animal.

LEAKS IN FOUNTAIN PENS

When a foundtain pen is leaking the leak is usually found at joint where the pen is filled. This leak is always small, nevertheless it is very annoying, for no matter how dry you wipe the joint your fingers are always soiled whenever the pen is used.

To prevent this trouble, use a small amount of tanglefoot such as is found on sticky fly paper. Apply this to the threads and joints, screw the joint back in place, and wipe off the surplus. Te tanglefoot always remains sticky, never dries up, and no ink can pass by it, since the leak is caused by capillary action.

If properly applied, the tanglefoot will prevent the pen leaking for at least a year.

TO WAX FLOORS

Into a basin shave one pound of beeswax. Shave as thin as possible, cover the shaved beeswax with turpentine, let stand twenty-four hours. Then rub into floor or linoleum with a woolen cloth. Have the floor or linoleum perfectly clean. Do not heat the wax before rubbing it in. This will prolong the life of linoleum and give the floor a beautiful finish.

FORMALIN VS. BLUESTONE FOR SMUT

R. A. Wilson writes us: "Once again the time of year draws near when the successful farmer will be deliberating on the best method of treating his wheat for the prevention of smut. Last year's smut showed in this locality that wheat treated with bluestone was the best. Four or five years ago many of our neighbors advocated the use of formalin as being cheaper, easier handled, and fully as successful as bluestone. Three of us who up to that time had used bluestone, decided to try the formalin. Three years ago we used formalin, strictly following directions, but found smut when we were stocking the crop, for the first time in years, so we went back to bluestone. Our neighbors did not notice it, but used formalin again, and thought we must have failed to use formalin properly. Last year these same men had a lot of smut.

"The best way to dissolve bluestone is to get a new granite kettle, as bluestone will not eat through it; put in the amount of bluestone required, add sufficient boiling water to cover, and put on hot stove untfl dissolved. We use one pound of bluestone to ten bushels of wheat, and have always found it successful."

CREAM SEPARATOR MANUFACTURERS SAY

that two-thirds of all complaints about cream separators are due to faulty lubrication. That is because the close-fitting, fast-running mechanism of the separator demands a special oil—and most people use "just any old oil."

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is made especially for cream separators and we know that it is "right," because our lubrication experts have made a study of separator construction and exactly adapted the oil to the requirements. Dealers everywhere.

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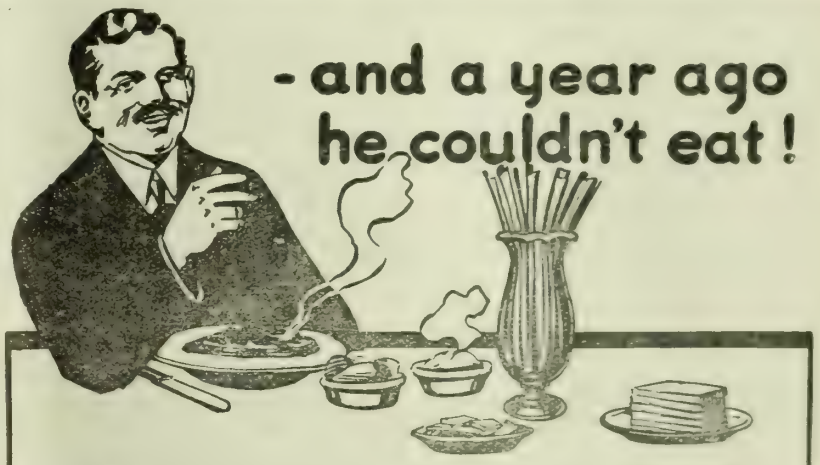

TO-DAY he can eat three square meals and sometimes one "extra" because Chamberlain's Tablets toned up his stomach and gave him a good digestion. They are a great help to nature. They stimulate the liver and induce healthy action of the bowels. Any time you are feeling "headachy," or bilious, or if your complexion is yellow or spotty, start taking Chamberlain's Tablets at once. Most times a single dose at night makes you bright and smiling in the morning with a clear head and a vigorous appetite.

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WHAT PRICE DO YOU PAY FOR TEA?

This is Very Important on Account of Changed Conditions

Conditions in the tea markets of the world have changed considerably since the war. On account of Russia prohibiting the sale of vodka and France putting the ban on absinthe, these countries have become larger consumers of tea. In fact, France and other countries have followed the English custom of serving tea to the troops instead of coffee, and this takes an enormous supply of tea.

These largely increased demands for tea would be sufficient in themselves to have caused a rise in tea values. But, in addition, ocean freight rates are three times normal, and insurance rates are very high, and over eighteen million pounds of tea have been lost on vessels which have been sunk by German cruisers and submarines since war began.

The foregoing facts explain why tea is higher in price than before the war. If you are still paying the same price for tea as you were eight months or so ago you are getting a lower grade than the tea you formerly used. For example if you are paying 40 cents a pound you are getting the quality that sold at 30 cents a year ago. The old 40-cent quality is now selling at 50 cents—in fact, has been selling at this price for months. If any one has not been enjoying their tea lately they will no doubt find that they have not been getting the same grade or label, consequenty it has not tasted so good. The flavor wasn't so full or so rich.

But tea at 50, 60, and 70 cents a pound is not dear. In fact, it is the cheapest hot drink obtainable when you consider the great number of cups of tea a pound will make. At 50 cents a pound the cost per cup is only 1-5 of a cent, so small that it is hardly worth considering.

There are more people enjoying tea today than ever before, and what other beverage will give so much real enjoyment at so small a cost? And while tea sells at anywhere near its present moderate prices there is no reason for not enjoying our due share of this delightful beverage.

SHEEP

Lamb and mutton are dear all the world over. Scotch mutton is now selling on the Smithfield market at 22 to 22¾ cents per lb., and English at 21 to 22 cents per lb. Both Australian and New Zealand frozen lamb on the same market are selling at 17½ cents. Yearling lambs in Canada have reached the record price of $14.00 per cwt., while in the United States they have been fetching as high as $11.80. By way of comparison, these prices considerably exceed the advance in values for other live stock, but no appreciable reduction need be expected except through a rapid and general expansion in production.

The wool situation needs little comment. While it is probably true that the mills in Canada have, at the present moment, sufficient stocks of Canadian-grown wool to meet their requirements for the current months, such is only a temporary condition, and is not similarly the fact as regards their requirements for wool not grown in Canada. The position of the world wool market is very firm indeed. To quote from the report of the wool sales held in London on the 11th of April: "Competition was thoroughly strong and well distributed. The demand for cross breds has been lively." There is no indication from any quarter that the market for wool will be overstocked, or that prices will recede. The contrary rather is the case. Russia and France are purchasing heavily in Great Britain, while United States and Canada are not easily able to obtain their requirements. Farmers unquestionably are in a very strong position as regards the sale of their wool this year.

The maintenance of present prices can have only one result. Already renewed interest is being evidenced by farmers who have not kept sheep for years. Ram sales were particularly good last fall. More sheep are being bred in many of the provinces. We believe that this year will show a further extension of the business. As a matter of fact, no farm animal can be made more profitable at the present time to its owner. The keeping of sheep for the sake of the wool alone may become an economic necessity. With grade lambs selling on the open market for more than pure breds brought two or three years ago, a revival of the sheep industry in Canada may confidently be anticipated.

HEREDITY

The laws of heredity are a continual puzzle to breeders of live stock, and the oft-quoted maxim that "like produces like" does not always appear to come true. Possibly a slight alteration would be an improvement—like produces like from like. Not only must sire and dam of the same type, but their ancestry must be of the same type, too. "Throwing back," that bugbear of the crossbreeder, has never been fully explained, although Mendel's researches and discoveries have brought much light to the subject. This breeding back is undoubtedly due to some powerful ancestral influence. Many apparent freaks and "sports" in both animal and vegetable kingdoms are doubtless due to reversion or atavism. De de Vries has found that plants appear at long and irregular intervals that have distinct differences from their parents, and that these new characters are permanent. This is almost a new theory as to the way in which evolution proceeds. Very few plants have been noticed to change in this manner, and much study is needed before the theory can be fully established. Variation from type is also brought about in a way not often considered in the present day.

Imitate Surroundings

It is a well-known fact that animals mimic in the color of their coats their natural surroundings. This mimicry is thought to have taken years and ages to accomplish—was only produced by a long course of selection in which animals that had not this protecting mimicry were killed off by their enemies. Jacob knew better than this four thousand years ago, and, surrounding his breeding places with striped and mottled fences and posts, he quickly produced striped and speckled animals in his flocks. Doubtless he knew that "nervous impression" produced on the female at the first service aided nature considerably in her mimicry. Scientists call this phenomenon Telegony, and it is still a force breeders have to meet, as the trite old text says, "unto the third and fourth generation." Climate is also responsible for many variations from the law of heredity. Though changes from this cause are certainly very gradual, and not much noticed in one generation, we find in every country this adaptation to surrounding circumstances producing a difference in type. Cold stimulates the growth of hair till it becomes thick and woolly, as in the Iceland ponies. The rocky mountains of Scotland and Wales have produced the hard, flint-like hoofs of the mountain ponies found in these countries, just as the lowlands have produced the heavy, wide-soled draught horses. Rough treatment and fright can hardly be considered a part of nature's great purpose, but they make their influence felt none the less on the young as yet unborn.—S. J. Wigley.

One broken or soft-shelled egg will often start an entire flock in the habit of eating eggs. Furnish plenty of attractive nests to avoid crowding. It is best to have nests secluded and darkened and rather high up.

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If you could step into my warehouse and see with your own eyes the Roofing I offer. If you could compare it and test it alongside of any other roofing you know. If you could see the stack of letters testifying to the genuineness of our values. If you could do this there is no doubt what your answer would be.

But you can't—You can't very well come to me. And so I am coming to YOU, with the most liberal, open-and-above-board,

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offer that has ever been put in print. I want you to see a sample of my Roofing. I want you to test and compare it any way you like.

Forget my low price. Think of quality only. Then if you find my Roofing equal to, or better than others, and if you also find it much lower in price, I know that I can leave the rest to your common sense.

Mr. L. E. Allen says:

"I have carefully compared by testing in several ways the sample you sent me, with Roofing at over $3.00 per roll, and can find no difference!" (Cost to Mr. Allen was $1.85 three ply.)

I want you to have the same chance as Mr. Allen. I want to send to your station at my risk, all carriage charge paid, a sample Roll of my Pure Asphalt Roofing. Government standard saturation. Complete with rust-proof nails, cement, and full instructions for laying. Each Roll covers one square, allowing for laps.

I will ask you for no promises in advance. I gladly take all risk because I have already proved in hundreds of cases that my Roofing sells itself. Hundreds of customers testify to savings of from 75 cents to one dollar and more per roll. No matter what size or style of building you have, I can save you money on the Roofing. Give me your name and address on the enclosed coupon.

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Hamilton, Canada.

I am interested in Roofing for my ..... The size of the roof is ..... ridge ..... rafter. Please say how many squares of your Roofing will be required. Also send to .... Station, prepaid, at your risk, a sample Roll of your ..... ply Roofing. I agree to inspect the sample roll on arrival, but I am not bound in any way to give you my order.

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BARB-WIRE WOUNDS

After a barb-wire accident, do not apply axle grease or any rancid ointment to the wound. Wash the wound thoroughly with warm water. Then clip the hair as closely as possible around it, and wash again to remove any hair or other foreign substance. When sand or hair has lodged in the depths of a deep cut, never use a wet sponge to clean it out. Use a piece of absorbent cotton or cotton batting. There will be much less risk of infection. It will be useless to put any stitches in a wound that is very deep or ragged, or that is located in a place not in perfect rest when the animal is making natural movements. Dry dusting powder has a healing effect on barb-wire wounds and other large, moist cuts and abrasions. Such a powder may be prepared cheaply by mixing together equal parts of slaked lime, sulphur, and charcoal. Prevent lock-jaw dangers in all nail wounds of the hoof by opening them up freely, which provides drainage for serum and pus. Saturate with a solution of corrosive sublimate and water in the proportion of 1 to 500. Cover with dusting powder, absorbent cotton, and a bandage. This treatment should be repeated daily until the wound is healed.

RINGWORM

The term Ringworm is applied to a skin disease of animals which is caused by a parasite of a fungus nature, and the disease only results by an animal becoming infected with this parasitic fungus or ringworm parasite. The vitality of the ringworm parasite is very great, and often after removal from an animal it will live and remain active for a great length of time in a stable. Ringworm may be conveyed or spread either by direct contact with affected animals or indirectly by various intermediate agencies, such as infected bedding, blankets, curry combs, and brushes which have been in use. Calves and young cattle are most commonly affected with ringworm, more especially when kept confined in close, damp, winter quarters which are predisposing factors. Adult cattle and horses are less commonly affected, although they are also liable to be attacked. On certain premises, where ringworm occurs among calves, the parasite may remain on the walls, stalls, posts of the building and fences, and the disease may be continued on the premises and conveyed to calves from year to year, each winter.

Symptoms of Ringworm

The parasites attack and destroy the hair, so that the disease becomes manifest by the formation of circular bare patches of skin. The affected parts of the skin become scaly in appearance and encrusted with scabs of a silvery-gray color, and when the scabs are removed a raw bleeding surface is exposed. Among yearlings and calves the disease occurs most frequently and is noticed to affect the regions around the eyes, ears, neck, and shoulders, and in some cases in calves may chiefly affect the skin around the mouth and lips. In horses ringworm is chiefly seen affecting the foals and young horses, and in them is noticed more often to affect the upper parts of the body, such as over the shoulders, the back, loins and croup, and along the side of the neck and head. Ringworm is also transmissable from affected animals to human beings, so that a person should guard against this possibility.

Treatment of Ringworm

Animals affected with ringworm should be separated from non-affected animals until they have been cured of the disease, in order to prevent its spread. The first steps in treatment should be to remove all the bedding and litter from the stalls each day and have it burned and replaced with fresh, clean bedding. The curry combs, brushes, blankets, and other articles in use with affected animals should be disinfected either by boiling or soaking in a strong antiseptic solution, such as a 3 per cent solution of carbolic acid or creolin, made by adding three parts of the drug to 100 parts of warm water.

Stables occupied by the affected animals should be cleaned and disinfected with limewash and carbolic acid. If these precautions are followed out, the affected animals can then be readily cured of he disease by thoroughly washing the affected parts with warm water and soap to remove all the encrusted scabs and matted hair The hair around the margins of the affected parts should be closely clipped. After washing the affected parts they should be allowed to dry, and then dressed with tincture of iodine. In using the tincture of iodine, it should be mixed in an equal amount of clean water and applied to the affected parts once a day by means of a small brush or a cotton swab until all of the affected parts are completely coated over. The iodine treatment should be applied daily until all of the affected parts are healed.

Another good preparation for the treatment of ringworm is a mixture composed of equal parts of tincture of iodine, carbolic acid, and water, and which is applied in the same manner as the iodine itself. Another useful remedy for he treatment of ringworm is sulphur ointment. This is made by mixing one part of sulphur and two parts of lard together to form an ointment. The ointment is then smeared over the affected parts each day until a cure is affected. While the affected animals are under treatment they hould be kept separate from non-affected animals on the premises until they are completely cured of the disease.

FIGHTING INSECTS ON HOUSE PLANTS

Many persons have considerable difficulty with insects getting on their house plants, and they experience much annoyance in getting rid of them successfully.

Tobacco dust will in a great measure prevent the insects from getting a start. Chopped tobacco stems laid on top of the soil in flower pots will kill many insects, and prevent others from coming. Powdered tobacco well mixed with the soil on the surface is good, and a number of liquid tobacco preparations when diluted with water will kill most pests, but all these things are more or less trouble and cause annoyance to persons who do not like tobacco.

Tobacco smoke will drive the insects off, but this is so mild, owing to the fresh air all about the plants, that it only acts in a temporary manner. If a person can shut up a plant in a tight room or a cabinet made especially for the purpose, and the fumes of the tobacco are abundant enough, it will kill all insect life.

Expert florists have to fumigate with tobacco and other poisons to rid their houses of insects. Some of the chemicals are sure death to the pests, but they would injure or kill the persons using them if they did not make a hasty retreat.

All these things are all right in their places, but for an ordinary house, where a few plants are kept, there is a much better and safer, as well as a more pleasant, way to proceed.

Use hot water to kill the pests. I hear my friends say that it will kill the plants. Try it and see, just as I did, the great good it will do.

If you have the aphis or white fly, or other forms of insect pests that are causing the plants to look sickly, heat water until it is at a temperature of from 125 to 130 degrees by a reliable thermometer. Have the water in a vessel large enough to permit giving the plant a dip. Hold the hand over the soil in the pot, allowing the fingers to pass on each side of the stem of the plant. Dip the top of the plant into the water until the foliage has been immersed. Do not allow the plant to remain in the water more than a second or two. Longer will injure the foliage. Dip the pot and soil into the water also. This can be allowed to remain for several seconds without danger of injury.

Should the plant be too large to dip into the hot water, sprinkle the plant thoroughly with water at the above temperature. A light sponge will help greatly in bathing the foliage of large plants with hot water. Many insects can be killed in that manner.

If you have a sickly looking plant and you cannot see insects about it, try pouring some hot water in the pot, about the edges, or try setting the pot in some warm water in a shallow pan. This acts like magic in restoring a plant to its natural condition. Heat is life if used in the right way, and it is death to the delicate little insects that live by sapping the life of the plant for days and weeks.

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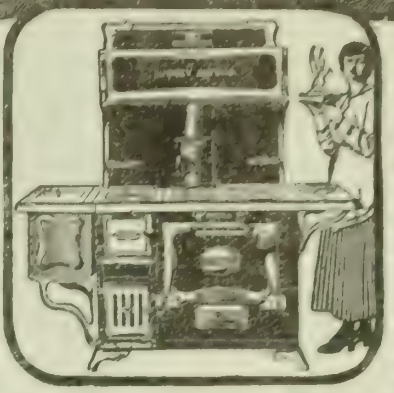

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GURNEY-OXFORD

TO WASH SWEATER AND OTHER WOOLLENS WITHOUT SHRINKING

"Before I wash my sweater, I take it out and beat it or shake it until all the dust is out of it. Then I make a soap paste by taking a quart of boiling water and shaving into that one bar of good soap; then I add six tablespoonfuls of borax and heat the mixture until the soap is dissolved. I take a bowl or clean dishpan and fill it three-fourths full of lukewarm water, and put in half a cup of the soap solution. If the water is very hard, I add a teaspoonful of borax for each gallon of water. Then I soak the sweater in that and place the plan where the temperature of the water will remain the same. I leave this for several hours. After that I wash the sweater by pulling it up and down, or else I work it with a kneading movement, but I never rub it on the board, nor do I rub it with my hands, or rub soap on it, for that would shrink it. If it has spots that need special attention, I take a small brush and scrub the spots and the collar and cuffs.

"I change the water frequently, always making the same solution, and giving much care to keeping the temperature even. I do not let the sweater cool. I work rapidly, and rinse it in water that is again the same temperature. Into the rinse water I put only two tablespoonfuls of soap solution. If woollen goods are rinsed in clear water they will be stiff, but a little soap will keep them soft and fluffy. I press all the water out by passing the sweater through wringer, then I wrap it in a towel and press it with my hand ... until ... been soaked out. I draw the sweater into shape by pulling the shoulders and sleeves to the width I desire; then I draw the front, back, and collar into shape, and baste the sweater on a sheet, and dry it in a room that is the same temperature as was the water. Many a sweater is ruined by cold or hot water, or by hanging it out in the cold. Keep the temperature even from the time you soak the sweater until it is dry. Then shake it or beat it until the air has passed through the wool, and it is fluffy and loose again.

"Woollen dresses, underwear, and other articles made of wool can be treated in the same way without shrinking. Of course, the careful housewife is anxious to have her articles all wool and of a color that can be satisfactorily washed. Plain gray, red, black, and blue sweaters will give far better results than will striped sweaters. Almost all deep colors will fade a little, but if the work is well done it will not seriously affect the looks of the garment if the color is even; but if the white stripes are dulled by water that is stained it is impossible to get them clear again."

DOWN AT THE BARN

Down at the barn I've got a box in which I keep bolts and scraps of iron that might be utilized for repair purposes. Say ,it comes in mighty handy oftentimes.

Down at the barn I've got a place to hang all the harness. Just nailed up a strip across the tow-by-fours and drove spikes into them. Find it better than throwing the harness ou the floor.

Down at the barn I've got a box for hammer, hatchet, and nails. Don't have to look al lover the place for the nails or something to drive them with. Mighty handy when you are in a hurry.

Down at the barn I've got a lot of rivets and everything just ready to mend a broken piece of the work or buggy harness.

Down at the barn I've plenty of axle grease for the wagon and buggies, and some washers handy to keep wheels from rattling.

Down at the barn I've a ball of binder twine ready to use when I need strings for sacks or any other purpose.

Down at the barn I've got the surrey shedded from all the rain and the hot sunshine. Haven't had the tires tightened for six years. They don't need it.

Down at the barn I have a cozy stall for every horse and cow. Makes a fellow feel good when the storms are sweeping cold nights.—W. D. Neale.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BEES! BEES!

We offer for sale several colonies of Bees in first-class condition and warranted free from disease.

CRAIG BROS.

Amherst Nova Scotia

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.
E. L. Colpitts, Petitcodiac, N.B.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00
Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Pure bred Yorkshire Pigs, price $8.00 each.—FISKE BROS., Florenceville, N. B.

FOR SALE—Two registered Ayrshire Bulls.—L. HERRIDGE, Hoyt, N B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

FOR SALE.—Eight six-month-old best registered Ayrshire and Holstein Bulls, $50.00 each.—E. M. WHEATON, Putnam, Conn.

WANTED.—An experi nced herdsman to take charge of a herd of Holsteins. Apply, stating wages, &c , D. R. NICHOLSON, Coxheath. N. S.

WANTED IMMEDIATELY—Reliable agents, good pay weekly, outfit free, exclusive stock and territor , our agencies are valuable. For articulars write MANAGER, PELHAM NURSERY CO., Toronto.

WANTED TO PURCHASE—Two Registered Yorkshire Sows of the very best breeding. Communicate, stating price and age, with F. W. SUMNER, Moncton, N. B.

EGGS FOR HATCHING.—Pure bred Rose Comb Rhode I land Reds. Good winter layers. $1.00 p. r 15.—MRS. B. H. SMITH, Yo ng's Cove Road, N. B.

EGGS FOR HATCHING AND BABY CHICKS from Imported Heavy Laying Strain of Barred Plymouth Rocks and White Leghorns. $1.00 per setting—J. H. PRINCHARD, Summerside, P E.I.

PURE BRED HOLSTEINS FOR SALE.—One Bull, 17 months old; one Bull Ca f, 4 months old; one Heifer Calf, two weeks old; of excellent breeding on both sides. For particulars write ROBERT C. HICKS, West Bathurst, N. B.

BOYS AND GIRLS MAKE $1.00 selling 25 packages Empire Court Plaster. Three colors. Antiseptic. Sells quick at 10c each. Order now. Send no mo ey until sold.—VINCENT DAVIS, Box C, Beebe, Que

HATCHING EGGS.—Test 90%, fertile vigorous pens; exhibition quality; unexcelled winter layers. Single and Rose Comb Anconas, Sicilian Buttercups, White Wyandottes, $4.00, $3.00, $2.00 fiftee .—A. E APPS, Brantford, Ontario.

BANTAMS.—Our full stock of Bantams and Pigeons for sale, including all our prize winners at Halifax, Amherst and Charlottetown. All first class stock. Write for prices on your choice varieties.—SPRING PARK POULTRY YARDS, Charlottetown, P E. I.

FOR SALE.—Bronze Turkey Eggs from large hens, headed by 40 lb. gobbler, $4.00 dozen; B.P. Rock Eggs, $1.50 for 13; W. Leghorn Eggs, $1 50 for 13; White Wyandotte Eggs, $2 00 for 13; Guinea Eggs, (Pearl) $1.00 for 9. Belgian Hares and Flemish Giant Rabbits, $1.00 each and upwards. No orders filled parcel post.—HOTEL DIEU FARM, Chatham, N. B.

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BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.
Our breeding pens are mated as follows
PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15
PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.
PEN NO. 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15
All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm," Oxford Junct., N.S.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S

BULL'S CREEK FARM

R. O. M. HOLSTEINS

All Bull and Heifer Calves advertised in previous issues sold. Present offering three good R O M. Cows now milking. If desired will be bred to my herd sire, (son of Woodcrest Sir Clyde the $2000 Bull.) Also a Yearling Heifer already bred

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

ABSENCE OF MILK IN A MARE

"I bought a good six-year-old mare which I intended to keep as a brood mare. I bred her, and she is with foal. But lately I heard that she had two colts which she could not raise because she had no milk. When foaled the colts were strong and vigorous, but died three or four days after. When she foaled her udder did not enlarge only on one side, which enlarged about the size of the fist. Is there any treatment for her? Which is the best method to nurse a colt?"—Subscriber.

Answer: Agalaxia or absence of milk in the udder is not uncommon in animals; it is frequently met with in the mare and cow, especially in those that have not been bred for a long time, and in aged mares bringing forth their first young. In many instances it represents nothig more than a disturbance in the physiological function of the gland, but in others it forms a true diseased condition. In the former class some of the following causes may be responsible: Present congestion or inflammation of these glands, exhaustion from disease, severe labor, insufficient food either during or immediately after pregnancy, and emaciation. In some instances the milk gradually appears some time after parturition. These cases may be successfully treated by removing the cause and assisting nature with good nourishing food and such remedies as aniseed and fennel seeds mixed, and given in tablespoonful doses mixed with each feed. When due to some chronic pathological condition such as changed gland structure or atrophy of the mammae, or resulting from a previous disease of the udder, treatment is not likely to prove successful. The best way to raise a foal which has been deprived of its mother's milk is, if possible, to put it on another mare that may have sufficient milk for two colts—that is, providing she will take to the stranger. Another way is to raise it on cow's milk diluted with one-third water, with a little sugar added to sweeten. It should be warm and may be fed from a bottle. The colt should be taught to drink from a pail.

During the rush of spring work many horses are overworked. Let them rest a few minutes every half hour. It doesn't pay to get them overtired. Better be a little longer about the work han o have a sick horse.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

FOR SALE!

One Registered Bull, "Coverdale Major", No. 98355. Color red with a little white. Calved Jan. 17th, 1915. This is a splendid young bull. Price $125.00.
Also "Perfection", No. 102297. Calved October 3rd, 1915. Bred by F R. Cromwell, Cookshire, Q e. Price $175.00.
These animals are both bred in the purple.
Full particulars of pedigrees given on application. Both are very superior animals. Apply to

F. W. SUMNER, Moncton, N. B.

500 Acres $6000

Last Year's Income $2920

100 acres in tillage; 50-cow spring pasture; valuable lot of growing wood and timber; 300 apple trees; 12-room house in good repair; 3 big barns, garage, poultry and ice houses; daily mail, telephone, near neighbors and schoo ; only 3 miles to depot; located in one of the best farming towns of Maine; soil particularly suited to potatoes and corn; if taken before pl nting owner throws in 8 cows, registered bull, pair horses, driving horses, tools and machinery, cream sepa ator; $6000 takes all, easy terms to right man; chance for you to clean up a small fortune in a few years; see page 5, "Strout's Money-Making Farms," co y free, for details.—E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass.

HOW TO USE PRUNING SHEARS

Double cutter shears used in orchard pruning give good satisfaction when used upon limbs smaller than three inches in diameter. When care is taken to cut through the bark all around the branches to be removed, the wounds heal over much better than when the growing layer of bark and young wood is crushed by being squeezed from opposite sides without being cut around first. One caution is necessary in using this implement:

When making cuts of forking limbs, it is necessary to avoid bearing down because the main branch to be left is likely to split and a heavy load of fruit the following summer is almost sure to break the limb at this point. Effort should always be made to lift when making such cuts. Indeed, it is a good plan always to cut off the branch a foot or so beyond the point where the crotch is, and then to remove the stub with a second cut.—M. G. Kains.

COSSAR STOCK FA M,
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. **J. MEIKLEJOHN. Agent.**

Elmhurst Stock Farm !

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM

Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Eggs for Hatching from Exhibition Matings

Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

Single Comb R. I. Reds.
Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

Eggs from these pens $2.00 per 13.

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

Five Guernsey Bulls for Sale

We have some extra good quality Guernsey Bulls from Record of Performance dams. We must reduce our stock and will sell at very low prices. Write for particulars.

JOHN N. CHUTE,
Berwick, N. S.

"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding **The Farmers Most Profitable Cow** should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell ViewFarm, Lake Edward, N. B.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires !

At our recent sale we sold many valuable cows, bulls and young stock. We still have on hand some of the best cows, heifers and young bulls in Eastern Canada, and with these we purpose to remain in the Ayrshire breeding business and again build up our herd to its former numbers. Meet us at the fairs this fall.

Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

McIntyre Bros.,
Sussex, N. B.

Small Fruit Plants

Strawberries.—Senator Dunlap, $3.50 per 1,000; other choice varieties, 85c per 100; mail postpaid.

Raspberries.—"Herbert," the only reliable, 75c per doz, mail postpaid; $2.00 per 100, $15.00 per 1,000.

Gooseberries.—"Pearl," 15c each.

EGGS FOR HATCHING.

Barred Plymouth Rocks, White Wyandottes and S. C. White Leghorns. Price $1.00 per 15.

Send for circular.

ORCHARD HILL FARM,
Brown's Flats, N.B.

SUNNYSIDE STOCK FARM

PRESENT OFFERING:

Ayrshire Cattle Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM

Shorthorn a ttle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - lifton, N. S.

Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

S. J. GOODLIFFE, - Sussex, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

AYRSHIRE BULL FOR SALE !

I have sold all my Bulls but one. He is 10 months old and an extra fine individual—is well built and growthy and now weighs 650 lbs. Is mostly white with few dark brown spots. His dam made in R. O. P. test as 3 years old 7492 lbs. milk and 306 lbs. butter fat. Also in R. O. P. test as 4 years old made 8917 lbs. milk and 356 lbs. butter fat. His sire's dam made 1318 lbs. milk and 530 lbs. butter fat in R. O. P. test in 12 mos. and in 15 mos. made 15159 lbs. milk. This bull is sure to make a good show animal, is in fine condition and has just passed the Tuberclin test O. K

For further particulars apply to

ARTHUR S. DENNIS, Willow Farm, Stewiacke, N. S.

Poultrymen Attention !

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.

Send for free Catalogue and give us a trial order

FARMS FOR SALE

Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER,
33 Jubilee Road, HALIFAX, N. S.

HOUDANS

The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast males. Combs and wattles protected by heavy crest and beard. Eggs $1.50 per 15. Cash with order

W. J. M. MacLEOD, Sussex, N. B.

JERSEY BULLS FOR SALE

Three young Bulls from R. O. P. cows with splendid records. These are just the type of Bull required by creamery patrons who wish to improve the producing qualities of his herd both in quantity and quality of milk and our price puts them within the reach of the man of moderate means.

W. CLARK & SONS,
Maple Grove Farm, North Wiltshire, P. E. I.

QUERIES

Linseed Oil and Turpentine

Having seen in this paper many times linseed oil and turpentine prescribed for worms in the horse, I decided I would try it, with the result that it nearly killed my horse.—L. M. T.

Raw linseed oil and turpentine is, and has been for many years, the standard, simple remedy for worms, and any trouble arising in a case of this sort should be traceable to error in size of doze or method of administration, or perhaps to the fact that impure, bung-hole or boiled oil has been used. I suspect that the war may have a bearing on this question, and that one should be very careful to secure pure, raw linseed oil. The oil must be raw, not boiled.

Spider on Teat

I have a heifer with second calf that has one teat on the end of which a scab forms every time she is milked that has to be removed before the milk will flow, and then it spatters all about.—D. F. B.

This is a case of what is commonly called spider. Great care must be used in order not to carry the disease to other cows, and it will be safest to milk this one last. Twice a day the teat should be treated with carbolated vaseline—before and after milking. If it becomes necessary to use a tube, be very careful to disinfect it by boiling each time it is used, and before inserting it should be smeared with carbolated vaseline.

To Remove Warts

How can I remove warts from a cow's teats?—E. P.

There are two methods of removing warts. Those with a stem can best be removed by cording with a strong thread; to others apply strong nitric acid, being careful to get it nowhere but on the wart. Repeat the application as often as the dead portion falls off. Shivering of the legs may be due to nervousness, or possibly to soreness.

ANIMAL POISONS

Stock owners are often greatly puzzled to account for the strange disorders and deaths that sometimes take place among their herds. Most of the poisonous plants are becoming well-known, loco weeds, wild parsley, and horse tail being easily recognized. Another plant, not so well known, but poisonous in its nature, is St. John's Wort. The strangest thing about this plant is that its poison has no effect on dark-skinned animals, nor even on the black patches of animals with varied coats. Acute inflammation is set up on the white skin, which peels off and is seen hanging in rags, while the black remains unchanged. Sheep suffer through eating this weed. Their ears swell, and the eyes are so affected that blindness sometimes follows, and even death. Cattle as well as horses are affected by the poison. The white skin on their noses often cracks and peels off. Exposure to sunlight is necessary to develop the curious symptoms of this disease. If protected by shade an animal quickly recovers. It seems as if the herb sensitizes the skin so that some chemical rays, possibly outside the solar spectrum, set up the inflammation.

The St. John's Wort family is a large one, some two hundred species being found in Canada. Common St. John's Wort (Hypericum perforatum) was introduced from Europe. Its medicinal properties have been known since the time of the Romans, and in Italy today it bears a name which means "devil chaser," the plant having the supposed power to cast out evil spirits. A good illustration of this plant will be found in "Farm Weeds of Canada," but a peculiarity of the leaves enables any one to recognize it. If held up to the light what appear to be a number of minute holes are seen. These are not really holes, but oil glands or cells. With the aid of a magnifying glass some of these cells are seen to contain a purple coloring matter, which, on bruising the leaf, stains the fingers a purple color. The same effect is produced by crushing flowers between the fingers. This coloring matter has been named hypericum red, and much resembles an aniline dye. This poison has a depressing effect on the beating of the heart, very similar to that produced by the poison found in the fox-glove. The crown of yellow flowers, well supplied with stamens, may be seen in June and July. It should be avoided when making hay, for the plant's poisonous properties remain active even after being cut and dried.—S. J. Wigley.

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LADIES WANTED to do plain and light sewing at home, whole or spare time; good pay; work sent any distance; charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

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DISKING THE OAT GROUND

Wishing to try the relative merits of single and double disking before sowing oats, I selected two strips of land in the same field last season, put on the same quantity of seed per acre, but disked one piece twice before seeding, the other only once. The yield of oats on the ground disked twice was considerably heavier—enough, I consider, to more than pay for the extra work. The seeding in each case was followed by a spike-tooth harrow which helped toward securing the ideal seed bed.

I note that some farmers who employ the double disking method of sowing do the seeding first. This is a mistake, as much of the seed will be covered entirely too deep. In double disking, one working is usually given crosswise of the other. While this is much preferable to a single disking, I have found lap disking a great deal better than either.

Let every other "round" reach just one-half way over the preceding round. This not only thoroughly pulverizes the soil, but the strip of ground directly between the two sections of the disk will be worked up more thoroughly than with cross disking. The ground will be much smoother, too, by the lap disking than cross disking, a valuable point in connection with harvesting the grain.—M. Coverdell.

HOME SOLDERING

I am sure a bit of economy I practice will be interesting. If one has been in the habit of running to the tinshop to have every basin mended when a hole appeared it is easy to save the trouble and mend your own tinware. Get ten cents worth of muriatic acid and five cents worth of zinc; take out of doors, pour the acid into an old china cup, cut up zinc, and drop into it; stand back while it spatters. When cool, pour into bottle again, and cork for use. Get a thin bar of solder, and if you haven't a soldering iron use the poker heated red hot. Then scrape around the hole you wish to mend until bright, and with a feather wet over spot scraped with the muriatic acid. Hold the solder over hole and melt it with the iron, and let it drop over hole and rub it over with iron to make flat and smooth. Small pieces of solder laid on the hole, then melted, answer nicely. If the hole is so large the solder runs through, set dish on roll of cloth to keep solder from running. Granite ware can be mended by making a sort of rivet of solder and melting it enough to clinch on each side. Of course, one wants something hard underneath to keep solder from dropping and to spread it.—L. N.

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CARE OF TIRES

Automobile tires, like machines, should receive some attention and care before they reach the point of "laying down on the job." A little care in looking over a machine occasionally will prevent trouble, so will a close examination of tires while they are still in good condition enoble one to prevent much of the trouble to which tires are heir.

The proper use of the extra or spare tire which every autoist should carry will enable him to make such examinations and repairs at the proper time. At regular intervals the extra tire can be used to replace one of the service tires, and the one removed should be gone over immediately. All the cuts, cracks, and breaks should be sealed by vulcanizing, and the weak places reinforced. According to "Motor," if a car is in constant service, one tire exchange per week, and in rotation, will enable one to keep all the tires in as good condition as possible. Of course, this period depends upon the driver and condition of the roads travelled. By this arrangement the extra tire will be kept in good repair for emergency calls, with the emergencies reduced to a minimum, and in most cases the tire milenge will be almost doubled.—A. Cammack, Colorado Agricultural College.

MEND THE OLD BUCKETS

Usually a bucket wears out first in the bottom, and is nearly good as new otherwise. If bottom is too poor to solder, and still not valuable enough to pay for having a tinner put a new bottom in, it may be cheaply repaired by cutting a circular piece of board just the size of inside of bottom. Press it in tightly from top downward, and when in place nail fast to lower rim of bucket with small strong nails. A little coal tar or pitch put in around joint will help vessel to hold liquids.

Galvanized buckets are liable to crack along the seam. These cracks may be remedied by smearing coal tar or pitch thickly on the inside along the crack and pressing on this a piece of strong cloth. This will make an almost useless bucket of service in dipping water for stock or watering and setting out plants.—D. Z. Angle.

KEEP CYLINDERS CLEAN

The carbon that forms in the cylinders of automobiles is the residue left from burning gas and lubricating oil. The hard deposit is formed from lubricating oil. Do not keep too much oil in the crank case. In old motors use heavy oil. The carbon should be removed either by scraping or burning with an oxygen flame.

EXTRACTING WARBLES

To extract warbles, place the mouth of a quart bottle over the grub and press tightly to exclude the air; hold there until the grub pops out. This method works fine, and is not severe to the cow. A quart whiskey bottle works fine.

POISON IVY CURE

This is what we use in our family for a poison ivy cure: Tansy tea, made good and strong; wash affected parts frequently, and drink some three or four times a day Make it nice and fresh for every drink. It is blood cooling and purifying, and seems to make one less susceptible to the poison.

The farm of the rich man who carries on farming for the pleasure of it may teach us some things; but, ah, how much more encouragement and inspiration are found in the work of the farmer who started in a small way, and, against heavy odds, made a success of farm operations!

Rice Omelet.—Take 2 cops of steamed rice, as in 25 or 26, add 1 cup sweet milk. Beat up two eggs and add them to the rice, and pour into a hot buttered skillet. Do not cook too fast. About ten minutes' slow cooking will be sufficient. Fold half over and serve on a platter; garnish with wee green leaves from any plant.

A mixture of alcohol and ether, 3 parts each, and ammonia, 1 part, is effective in removing perspiration stains.

If you can do so, grow more live stock.

THE MARITIME FARMER

AND

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How to Produce Cream That Makes Good Butter

CLEAN SEPARATOR
PROMPT COOLING
FREQUENT DELIVERY

Good Cream
Good Butter
Reputatioa For Quality
Increased Demand
Top Market Price For Butter
Maximam Returns to Dairy Farmer

A recent bulletin by O. F. Hunziker and G. L. Ogle, of Purdue University, Lafayette, Indiana, entitled "How to Produce Cream that Makes Good Butter," contains so much timely advice on the subject that we reproduce it in full. Every word of it is applicable to Maritime Province conditions, and all you have to do while reading it is to substitute the words New Brunswick, Prince Edward Island, or Nova Scotia, as your case may be, for the word American.

Importance of Producing Good Cream

The farmer holds the key to the quality of the butter manufactured and the price received for the same. The market price of butter is governed primarily by its quality. Good butter which brings top market prices can be made only from good cream, and the quality of the cream in turn is controlled by the care it receives on the farm.

Influx of Foreign Butter Demoralizes Market of Inferior Grades

Under present market conditions the quality of butter affects its price more than ever before, i.e., the difference in price between first grade butter and second grade butter is very great. This fact is due largely to the increase of imports of foreign butter, made possible by the reduced tariff. Most of this imported butter is of good quality. This influx of foreign butter will be vastly greater after the conclusion of the European war.

In order to successfully meet this competition with foreign butter, and to preserve American markets for American butter, we must produce better butter; we must produce a butter equal in quality to that of the imported product.

Good Butter Stimulates Consumptive Demand

Good butter is an essential asset of the dairy business under any condition. Each pound of good butter sold increases the consumptive demand of butter. Quality is the most effective advertising medium; in fact, it is an absolute necessity for the permanency of the business. The better the quality of butter the greater its consumption; the more brisk and the more favorable the butter market, the larger the returns. Quality is also the only really effective means to successfully compete against butter substitutes.

The Dairy Farmer Controls the Quality of Butter

The dairy farmer, the producer of milk and cream, controls the quality and price of butter. If he furnishes cream of good quality he makes possible the manufacture of good butter, which will command the highest price on the market. If he supplies cream of inferior quality, a low grade butter is bound to be made from it, which means small returns for the product.

The dairy farmer is the controlling power which determines the destiny of the dairy industry. The care he gives the cream on the farm determines the financial returns from the butter; and, in turn, the returns from the butter determine the prosperity of the dairy farmer, because the price the creamery pays for butterfat is necessarily largely regulated by the price the butter brings on the market.

Lack of proper care of milk and cream on the farm, and the resulting poor quality of cream, therefore, will augment the depression of the butter market and stimulate the sale of foreign butter and butter substitutes, causing low prices to the creamery and small returns to the farmer. These unatisfactory conditions can be overcome by proper attention to the quality of the cream on the farm.

How to Produce First Grade Cream

Every farmer in the state can produce first grade cream by reasonable attention to the following simple and fundamental principles: Cleanliness of separator, promptness of cooling, and frequency of delivery.

Clean Separator

The separator is the collector of many of the impurities contained in the milk. If cream of good quality is to be secured it is obvious that the separator must be cleaned thoroughly after each separation. If not washed and freed from all remnants of milk of the previous separation, the separator becomes a seat of contamination and a source of unclean and filthy cream, the disastrous consequences of which no subsequent treatment and care of the cream can overcome.

This does not mean that no attention should be paid to cleanliness and care of milk before separation. Milk produced under unsanitary conditions will not produce good cream, even if passed through a clean separator. In the production of good milk, clean stables, clean cows, clean milking, and clean utensils are essential; but all these precautions come to naught unless the milk is run through a clean separator; and experience has shown that it is this negligence in the care of the separator that has done more harm to the quality of the cream than any or all of the factors entering into the care of the milk before separation combined.

How to Keep the Separator in Sanitary Condition

Wash the separator after each separation. Immediately after separation, flush the separator with water until the discharge from the skim milk spout is clear. This removes most of the remnants of milk and cream, and loosens the separator slime in the bowl, making subsequent washing easy. Now take the bowl apart and wash with hot water containing some good washing powder, all parts of the bowl, discharge spouts and buckets. Then rinse them with scalding hot water and allow all parts to drain in a clean place. All other milk utensils should receive the same treatment. Do this after each separation.

Other advantages of a clean separator: Aside from insuring cream of good quality, a clean separator will skim more closely and last longer than a separator that is not thoroughly washed after each separation.

The slime which accumulates in the bowl reduces the space in which the milk is exposed to the separating influence of the centrifugal force. The separating efficiency is therefore diminished and more fat is lost in the skim milk.

If the bowl is not washed after each separation the impurities and acid formed in it, due to decomposition of the remnants of milk, tend to corrode the bowl and internal contrivances and to shorten the life of the separator.

Proper Cooling

Cool the cream immediately after separation by setting the can in cold water. The spoiling of cream, as well as the decomposition and putrefaction of other food stuffs, is caused by germ life, bacteria, yeast, and molds. Like other living organisms, germs require warmth to thrive. In the absence of warmth they are inactive and are unable to continue their work of destruction.

When the cream comes from the separator it is warm and in ideal condition for bacterial decomposition and spoiling. If it is cooled promptly the activity of the bacteria is checked and the cream will keep sweet for a reasonable length of time. The lower the temperature to which it is cooled the longer it will keep in normal condition. Cooling to the temperature of the water available on the average farm alone greatly retards bacterial action and prevents spoiling. Cream should be cooled at once after it leaves the separator.

Prompt cooling is not possible by merely letting the cans stand in the air. Air is a very poor conductor of heat. The cans must be set in water. Water cools cream about thirty times as fast as air.

Set the cream cans in a trough, tight box, tank, or half barrel containing water. If cooling water is available, let the water run through the tank continuously; if not, fill the tank up with fresh water at least once every twelve hours. If the cooling tank is connected with the stock watering trough, the water needed for the stock serves to cool the cream by running through the cooling tank first.

Do Not Mix Warm Cream with Cold Cream

Stir the cream frequently to hasten the cooling and to keep it in smooth condition. Do not pour warm cream into cold cream; this practice spoils the whole batch. Cool the warm cream in a separate can before mixing. The dairy supply houses are now putting on the market cooling tanks which provide for two cans for this very purpose. If you cannot conveniently make your own tank, or have it made locally, ask your creamery to secure a tank for you, or write to any reliable dairy supply house.

Other Advantages of Prompt Cooling by Setting Cans in Water

Aside from checking fermentation, and therefore avoiding rapid spoiling of the cream, the use of the cooling tank serves to take the animal heat out of the cream, preventing the cream and butter from developing an unpalatable smothered taste, which greatly depreciates the market value of butter.

When promptly cooled and frequently stirred the cream remains in proper mechanical condition so that it can be readily transferred without excessive loss due to sticking to the can. This also makes possible the taking of representative samples therefrom, which in turn insures accurate tests. One of the fundamental causes of irregular and incorrect cream tests lies in the poor mechanical condition of the cream when sampled. It is difficult to take a correct sample from cream that has not been cooled promptly and properly, nor stirred frequently, or that is otherwise in poor condition.

Frequency of Delivery

Cream is a highly perishable product. Like other similar products, it is best when fresh, and should therefore be marketed as early as possible. Age will deteriorate cream under any condition. While proper care retards such deterioration, it cannot entirely prevent it; hence delivery should be made often, preferably three times per week in summer and twice per week in winter.

The Proper Richness of the Cream

Adjust the cream screw of the separator so as to secure cream testing about 35 to 45 per cent fat. Low-testing cream sours and spoils more rapidly than high-testing cream, so that by the time it reaches the creamery it is often in condition unfit to be made into good butter. In the spoiled and curdy condition, it also

(Continued on page 622)

Cabbage Root Maggot and Its Control in Canada

Phorbiabrassicae Bouche

By Arthur Gibson, Chief Assistant Entomologist, and R. C. Treherne, Field Officer

In spring when cabbages and cauliflowers are set out, or when radishes, onions, beans and other plans appear above the soil, small flies, somewhat resembling the common house fly, but rather smaller and more slender, may be seen flying about close to the ground, depositing small, white, elongated eggs on the stems of the plants or adjacent thereto. These eggs hatch in a few days and the small, white maggots at once burrow down and destroy the roots. In the case of the Cabbage Root Maggot, there are three or four generations during the season. The Imported Onion Maggot also has several generations, and injury by these species may continue from May until autumn. The chief damage is effected in May and during June. Early grown crops are particularly attacked, some seasons whole fields of these being entirely ruined. Injury by the Seed-corn Maggot is largely confined to the seedlings of such plants as corn, beans and peas. The annual loss caused by these insects in Canada amounts to many thousands of dollars.

The larvae of the above three species, which are popularly known as root maggots, are similar in appearance, being whitish in color, rather blunt at once end and pointed at the other end, and when mature are about one-quarter to one-third of an inch long. It is in this stage that the insect is destructive and known to the farmer or vegetable grower.

Several important parasitic and predacious enemies prey upon the root maggots, but these unfortunately cannot be relied upon to control outbreaks of these insects, and therefore artificial methods of control become necessary.

Among the artificial methods, the screening of seed beds to prevent the female flies gaining access to the plants to deposit their eggs is important. Cabbages and cauliflowers when transplanted in the field may be protected by placing around the stems a disc made from one-ply tarred felt paper. In small gardens applications of decoctions of white hellebore, pyrethrum insect powder, or of a carbolic wash mixture have been found of value. Under field conditions the protection of such crops as onions, turnips, corn, peas, and beans from the ravages of root maggots have proved to be a difficult problem, but recent experiments with poisoned baits to destroy the Imported Onion Maggot Fly have been found to give much promise.

Fall plowing and rotation of crops while, of course, being excellent agricultural practices, have their limitations so far as the control of root maggots is concerned; such cultural methods, however, as soil cultivation and the use of fertilizers undoubtedly assist considerably artificial control measures. Owing to the fact that root maggot flies are known to lay their eggs on stable manure it is advisable, in spring, to avoid the use of such fertilizer as much as possible.

Introduction

Among the destructive root-infecting insects of importance to the farmer and vegetable grower, the Cabbage Root Maggot (Phorbia brassiace Bouche), the Imported Onion Maggot (Hylemyia antiquo Mg.—Phorbia ceparum Mg.), and the Seed-corn Maggot (Phorbia fusciceps Zett.), easily take first rank. The Cabbage Root Maggot, often referred to as the Cabbage Maggot, the Radish Maggot, or the Turnip Maggot, attacks freely plants of the Cabbage Family; the Imported Onion Maggot feeds early in the season on that portion of the onion plant below the ground, and later bores into the bulbs; the Seed-corn Maggot infests the seeds and seedlings of corn, beans, and peas, and occasionally attacks cabbage, radish, and a few other plants.

Fields of the above mentioned crops have, in certain seasons, been completely destroyed by the ravages of these root maggots. As such injury is so well known to farmers and market gardeners it is unnecessary to refer in detail to the enormous annual losses in Canada caused by these destructive insects. Suffice it to say that as a class they are of decided economic importance.

Historical

Injury by root maggots has been known in Canada for many years. The Cabbage Root Maggot, the Imported Onion Maggot, and the Seed-corn Maggot are all of European origin. It is not known definitely when these insects reached Canada. The Cabbage Root Maggot, Phorbia brassicae Bouche, was first recorded in the United States in 1835. In 1875 Couper reported that the Imported Onion Fly, Hylemyia antiqua Mg., was a terrible pest to the onion growers throughout the extent of the Dominion and that another species had been destroying cabbages in the neighborhood of Montreal, Que. This report undoubtedly referred to the injury caused by the Cabbage Root Maggot. It was not until 1885, however, that the ravages of the latter insect in Canada attracted wide-spread attention. In that year Fletcher stated that it destroyed from 25 o 75 per cent of the cauliflowers grown. There can be no question that both the Cabbage Root Maggot and the Imported Onion Maggot were present in injurious numbers many years previous to 1875, otherwise these insects would not have become so well established throughout Canada. The adult of the Seed-corn Maggot, Phorbia fusciceps Zett., was recorded, from Martin Falls, Ont., and the Province of Nova Scotia, in Walker's List of Diptera in the British Museum, Part IV, the title page of which bears the date 1849. It was not, however, until 1885, that injury by the larvae attracted attention. In that year Jack found the maggots at Chateauguay, Que., causing much loss in a field of golden wax beans. Fortunately, this maggot is not a regularly occurring pest, but in years of abundance much damage takes place, particularly to corn and beans. This species also occurs in every province in Canada.

The Cabbage Root Maggot
Phorbia brassicae Bouche

Life History—The Egg

Description.—The egg is very small, but easily seen on the plants or on the soil near them. In length it is about 1 mm. (one twenty-fifth of an inch) curved in outline on one side; in color white, with distinct ridges; in shape cylindrical, pointed at one end and rather blunt at the other. On one side of the egg there is a distinct grove which is wider and deeper at the blunt end.

Duration of Stage.—Full and complete records on the duration of the individual egg stage and the degree of egg fertility have been obtained during the course of study of this insect. The following table represents these two points arranged on the basis of an examination of 2,113 eggs as studied at Agassiz, in the Province of British Columbia. Inasmuch as these records were obtained from a consecutive series of experiments carried over the entire summer of 1915, at Agassiz, B. C., involving all possible generations they are mentioned here in preference to similar records obtained at other points in Canada. From a study of the duration of the egg stage it is clear that the period varies from three to five days, on an average, and this finding appears to coincide with available records in eastern Canada and in the United States.

Table I—Summary of the duration of the individual egg stage and the degree of fertility, Agassiz, B. C., 1915:

Period	Number of eggs Studied.	Average Number of days required to Hatch.	Per cent Fertility.
April 19-May 7 ...	261	4.87	88.2
May 21-May 31 ..	66	4.90	83.6
Month of June ..	371	4.70	85.0
Month of July ..	709	3.80	84.0
Month of August.	380	5.03	89.9
Month of Sept. ..	326	4.80	91.0
	2,113	4.7	86.9

From this we assume that the egg stage last on the average 4.7 days, and that the high egg fertility record is maintained throughout the summer, possibly, it would seem, even increasing with the advance of the season. All eggs do not, however, maintain such an even degree of hatching as the above table indicates. In our observations it was noted that the egg stage lasts on the average 4.7 days, our study indicated that

1.9 per cent hatched in 2 days
3.7 per cent hatched in 3 days
16 per cent hatched in 4 days
25.8 per cent hatched in 5 days
45.6 per cent hatched in 6 days
6.1 per cent hatched in 7 days
0.4 per cent hatched in 8 days
0.5 per cent hatched in 10 days

All these above records were obtained under supposedly ideal conditions; that is to say, from eggs hatched on slightly moistened blotting paper in vials under ordinary atmospheric conditions. Uniform incubator temperatures from 27 deg. C. to 30 deg. C. gave a variable hatching, also, from 3 to 5 days. To determine to what extent a variation may occur in the percentage of larvae hatching from the eggs, 509 eggs were kept under observation under ideal conditions, such as those just mentioned, in comparison with perfectly dry conditions as would be obtained on dry blotting paper in vials. The following results were noted:

258 eggs kept under moist conditions:
Average number of days required to hatch 3.7
Per cent hatched .....95.
251 eggs kept under dry conditions:
Average number of days required to hatch 3.3
Per cent hatched .....50.

The average of 50 per cent noted under dry conditions, we think, however, is rather high, our experiments, at Agassiz, B. C., indicating that exceptional high temperatures decrease the percentage of eggs which hatch.

The Larva

Description.—The mature or full-grown larva is about 8 mm. in length (one-third of an inch). It is whitish in color, flattened at one end and tapering to the other or head end. The segments are distinctly divided. At the blunt or caudal end are 12 fleshy tubercles, the pair nearest the centre being larger than the others, and each bearing two points, which are dark in color. In the centre are two conspicuous, raised, reddish-brown spiracles. In comparison with the Imported Onion Maggot the caudal end is more flattened and abrupt. From the head project a pair of black, hooklike mandibles or jaws. A short distance from the head on either side is a fanlike process; these are the spiracles and communicate with the tracheae, or "air tubes."

Duration of stage.—Obviously the question of the length of the larval stage is of great importance in its practical relation to the injury that the larvae effect, on account of the fact that the damage to crops by this insects is only brought about in the larval form.

Those who have studied this insect in the United States and in Europe state that the length of the larval stage lasts from three to four weeks. This corresponds with our records in Canada, which indicate that the larval stage varies between 19 and 32 days. It will not be necessary to detail our notes in this connection, as the duration of the individual stage seems thus well established. It is more important to determine the feeding life of the broods of larvae as they occur, for it is not the individual feeding action that causes such havoc, but the concerted action of many larvae over a considerable period of time.

Pupation.—When the larva has become full grown, having completed its feeding, it seeks a suitable position in which to change to the puparium stage preparatory to the emergence of the adult fly.

The puparium may be either imbedded in the tissues of the root where the larva completed its feeding or close to the root in the wet soil produced by the feeding of the maggots, or, again, the larva may migrate and pupate some distance in the adjoining soil, possibly as far as 4 or 5 inches from the roots.

The place of pupation in the soil, however, may vary considerably according to the depth of feeding. In our investigations at Ottawa, Ont., we found the over-wintering puparia at depths in the soil varying from 1 inch to 9 inches. In April, 1914, 146 puparia were removed from the soil. The following table indicates the percentage of puparia found at various depths:

Table II—Showing depth of puparia in soil:

Depth in Inches.	Percentage of puparia.
1	4.26
1¼	2.73
1½	3.41
1¾	1.36
2	6.16
2¼	6.16
2½	6.16
2¾	0.68
3	14.38
3¼	3.41
3½	7.53
3¾	4.26
4	11.98
4¼	0.88
4½	12.32
4¾	3.41
5	6.55
5¼	0.68
5½	2.05
5¾	0.00
6	0.00
6¼	0.00
6½	0.68
6¾	0.68
7	0.00

7¼	0.00
7½	0.00
7¾	0.00
8	0.68
8¼	0.00
8½	0.00
8¾	0.00
9	0.68

From observations made in the spring of 1914, there is evidently no constant position in which the larvae pupate. Puparia were found in all positions, from vertical to horizontal, at varying depths.

From experiments conducted by Washburn in burying puparia at different depths, it was surmised that the flies were not able to penetrate through six inches of soil under as near natural conditions as possible. In experiments, however, conducted at Ottawa, Ont., flies emerged at the depth of nine inches, as shown in the following table:

Table III—Showing emergence of flies from puparia buried at different depths:

Date collected, May 1.			
Number Puparia.	Depth buried in inches.	Number Emerged.	Per centage Emerged.
15	4	6	40
10	5	5	50
20	9	5	20

In the above experiment at Ottawa the puparia were placed in large open-mouthed jars on 1½ inches of earth. The puparia were then covered with soil to the depth stated in the table, which soil was packed tightly by jarring. From this experiment, and also owing to the fact that we have found puparia in the field 9 inches beneath the surface of the soil, we are justified in concluding that the adult flies are able to penertate to the surface from such depth and develop.

The Puparium

Description.—The puparium, within which the maggot changes to the adult fly, varies from light to dark reddish-brown in color. In length it is from 5 to 6 mm. (one-quarter of an inch), although some puparia are frequently found of shorter length. The puparium, which is simply the hardened contracted skin of the maggot, retains the tubercles which occurred at the blunt end of the larva. It is, therefore, usually possible to determine the insect from this character.

Duration of stage.—The length of time the insect remains within the puparium during the summer varied in individual experiments conducted at Agassiz, B. C., from 15 to 18 days. The duration of the puparium stage, however, as shown by the following table, far exceeds this latter period.

Table IV—Indicating the length of puparium stage during summer and autumn:

	Number of days.
July 6—Number of puparia under observation, 84; Dates of fly emergence, July 10—July 26	4—19
July 21—Number of puparia under observation, 80; Date of fly emergence, August 5—August 27	5—27
August 27—Number of puparia under observation, 70; Dates of fly emergence, August 28 to September 25	2—30
September 1—Number of puparia under observation, 75; Dates of fly emergence, September 8 to September 25	8—26

It may readily be supposed that puparia formed in close proximity to the surface of the soil, in more direct contact with the rays of the sun during the summer months, would produce flies sooner than puparia deep in the soil away from such temperature influences. Further, there are indications that there is a marked difference in the length of the puparium stage in the spring and summer as compared to late summer and autumn. In the late generation which passes the winter in the puparium stage there is a marked difference in the dates, in the following spring, at which the flies emerge. From puparia collected in the field at Ottawa, Ont., on April 25, 1914, flies emerged in the outdoor insectary from May 20 until July 6. In the field, however, the adult flies have been observed earlier than this at Ottawa, and as early as April 8 at Agassiz, B. C. In our insectary at the latter place no flies emerged from puparia after September 27, although until this date the flies had been emerging freely from puparia collected in that month. Indicating the marked difference of climate at Agassiz, B. C., and Ottawa, Ont., in March, 1915, it may be here stated that at Agassiz the monthly mean temperature was 41.02 F., and at Ottawa 19.36 F.

The Adult

Description of the Male.—The male fly is about one-quarter of an inch in length from the tip of the head to the end of the abdomen, the body and legs being of a dark ash-gray color, and rather thickly covered with black bristles. On the back of the thorax, the central portion of the body to which the two wings are attached, are three blackish, rather broad bands, the central one of which continues along the back of the abdomen. The eyes, which nearly touch each other in this sex, are of a reddish-purple color. At the base of the femur (the upper portion) of each hind leg there is a conspicuous cluster of rather long bristles, and this is a character which is used to separate the male of this species from the male of closely allied species.

Description of the Female.—The female fly is in general appearance much the same as the male. It is of a lighter color, and the eyes are rather widely separated. The abdomen is shaped differently from that of the male, being slightly longer and pointed at the end.

Duration of Life.—A series of experiments were conducted at Agassiz, B. C., to determine the average length of life of the adults, with results given in the following table.

Table V—Length of the life of individual flies:

Emerged.	Number of adults.	Average length of life in days.	Variation in length of individual life.
June 26-July 1	62	3.5	2— 5
July 10-July 26	53	4.8	2— 7
July 16-July 24	11	4.3	3— 7
July 17-July 28	33	6.2	3—10
Aug. 5-Aug. 25	57	5.9	3— 9
Aug. 28-Sept. 27	92	9.0	7—25

The above table would indicate that the length of the life of the individual adult increases as the season advances. The question as to whether the length of the life may be prolonged by feeding the flies with sweetened mixtures does not indicate that life may be extended very much over adults deprived of food, hence the table given is a compilation from results from flies both fed and starved after emergence.

The proportion of sexes.—It is interesting to note that, in the study of the Cabbage Root Maggot at Agassiz, B. C., of 408 adult flies reared, 197 were males and 211 females. This gives a percentage of 51.7 females and 48.3 males. There are no indications that there is any increase in either one sex at any period during the season.

Recently Mr. E. O. Essig, in his work on Injurious and Beneficial Insects of California, 2nd Edition, 1915, refers to the fact that the species of root maggot in California previously recorded by him as Phorbia brassicae was in reality Phorbia planipalpis. Mr. Essig bases his statement on the authority of Dr. J. M. Aldrich.

(Continued on page 614)

Wanned---A New Type of Author.

Editor The Maritime Farmer:

It is refreshing to note that there is an ever-increasing tendency on the part of Educationists to reconstruct the courses of study for the rural schools. That this reconstruction is vital to the highest interests of our rural population there can be no doubt. For many years the type of education attainable by the country boy was that which leads to a university course and professional life. The learned professions have now become overcrowded, while many of our farms are left vacant. The conclusion we draw from this state of affairs is that there have been many who have left farm life who should never have done so. That they did leave was not altogether their fault, for in addition to the course of study which was forced upon them in their youth, they probably had it dinned in their ears day after day that the only sure avenue to riches and a life of ease and comfort was through the learned professions. The successful men and women they had ever read about invariably left the farm, went to the city, and became famous. As for any person ever remaining in the country and becoming rich and happy—why, who ever dreamed of such a thing?

It thus happens in most cases that the country boy is from his earliest childhood seriously handicapped through his whole life. True, he learns enough arithmetic to prevent his being cheated in a bargain. He learns a little geography of an abstract nature. His history and literature have been served up in sugar-coated form for examination purposes, their real significance and utility being something unheard of. As for the nature and cultivation of the soil, the raising of live stock, and other features of his home surroundings and life-work, these are left out of the discussion, except, perhaps, as a topic for a reading lesson or to supply a poetic sentiment for a song. To undertake the consideration of the labor on a farm from a practical and scientific standpoint would necessitate the soiling of one's hands, and no person of culture would ever be guilty of that! True, George Washington chopped down a cherry tree, and Gladstone once a year stooped to cutting a full-grown oak, but that was done for advertising purposes, and doubtless to catch the popular vote at the next elections!

Under these circumstances, what wonder is it that the average school boy rejoices when he reaches the day that will enable him to throw his school texts into the attic and forget his past drudgery!

After leaving school there are many boys who are unable to at once carry out the evident aim of their educational career and start at once for the city to make a living. In addition to remaining at home, he must be given some pleasant diversion for his spare time. What better recreation for the long winter evenings can be suggested than reading an interesting and instructive book? But he has no taste for literature, because it was not taught him with the aim in view of developing an appreciation for what is best in this field. Supposing he try history. Here again we find that this book occupies the remotest and darkest attic recess, for of all subjects which were inflicted upon his innocent boyhood, surely history cramming was the most detestable. His mind then must surely turn to fiction. Perhaps he will select something from the Sunday School library. In that event, he will find all he wants of the "goody-goody" type so well suited for sickly girls and old maids. There seems really very little left except the adventure series and the popular novel. He will greedily devour anything that gives his mind diversion from the humdrum of farm work and will spend many hours learning the oft-repeated fact that every successful man of the past (and therefore of the future as well) in case he was so unfortunate as to have been born in the country, invariably left his oppressive and unendurable surroundings and became rich, famous, and supremely happy in the city. This type of character thus becomes the hero the boy consciously or otherwise worships. It follows on the teaching he received while at school. It therefore must be true to real life.

If, on the other hand, he turns to the popular novel, he will learn of life within kings' palaces and the homes of the rich who fawn upon royalty. He will learn that there is a deal of truth in these tales of snobbery, and that many of the titled nobility have had their honors bestowed upon them, not because they have in any way contributed to the development of national greatness, but solely because they became possessed of immense wealth. This wealth was made in the cities in practically every case; hence the city is the place to go in order to attain fame and fortune.

What is sorely needed is a series of books of an interesting nature which will be an inspiration to the country boys and an incentive for them to remain at home upon their farms. This line of fiction should teach that all work is honorable and that effort skilfully applied in farm work will reap as great a reward as work as conscientiously performed in the city. In a word, we need a new type of hero who remains away from the allurements of the cities and becomes very successful on the farm.

Prof. Suzzallo, President of Washington State University, is authority for the statement that we may expect in this conutry a war every thirty years. The reason assigned is that the literature supplied our young people is so full of military heroes, and our histories deal almost exclusively with wars and their slaughters, that it becomes part of human nature to think and gradually to act in terms of military glory. How different if our youths were taught history from the standpoint of the great struggles for political and religious liberty! How differently would the coming generation prize the dearly-bought freedom handed down to us from our ancestors! If such truths were as thoroughly instilled in the minds of the young as the bloody deeds of the great warriors now are, what a different outlook we would have. Grafters would disappear from our houses of parliament because they would not dare face an enlightened electorate. Farmers would receive as much—yea, far more—consideration than at present is shown to manufacturers, already grown abnormally rich from the labor expended on the farms. Conditions would soon become so equalized that there ought not to be any distinction between the man who honestly earns his livelihood on the farm and the man who sits in his business office. The country boy would come into his just inheritance. He would be happy with his lot in life and would not exchange places with princes in their palaces. The signs of the times surely point toward this desired end. Who will help to hasten its advent?

TEACHER, N. B.

The big fly traps are very efficient in the stables. Place one on the back porch and several in the barns and stables. Five or six are none too many for most farms. Make them 15 inches square and 30 inches high if you cannot buy them.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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JUNE 20, 1916

DATES OF ISSUE.

July	11—25
August	8—29
September	12—26
October	10—24
November	7—21
December	5—19

VALUE OF OPTAMISM

An optomist has been described as a man who can make lemonade out of the "lemons" which are handed him. He is a man who remains cheerful, hopeful, and courageous in the midst of any setbacks which fate may bring to him.

The spirit of optimism is a very valuable asset to any one. The pessimist is discouraged when he encounters difficulties or setbacks; he quits and tries something else. The optimist looks back over the history of his previous actions in the hope of finding out wherein he was at fault, where he himself was to glame in such a way as to at least help bring these troubles on himself.

Thereby he strengthens himself for meeting similar difficulties in the future. His failures and difficulties are the very material out of which he builds up his future success. He snatches difficulty out of defeat. He is an asset to his community and to his country.

Right now is the time for the optimists among live stock breeders to make lemonade out of the lemons which have been handed them by the foot and mouth plague. The pessimist will quit raising live stock. But the optimist will go ahead with greater care and precaution than he ever used before. He will take all possible precautions to see that his stock do not again become affected with this plague. He will use equal care to make certain they do not become infected with anything else. He will continue his breeding, but with greater care. The dropping out of the business of the pessimists, coupled with the increased demand for our live stock, will give him a greater market than he has ever had before for his animals, so that he should make greater money from his activities in future years than he has in the past.

Grit your teeth and become an optimist.

PREVENTION IS THE BEST CURE

If you want to protect your oat crop from the ravages of smut this year, you should give your seed the formalin treatment before you sow it. If you want to protect your potato crop from the ravages of scab, you should do the same thing before you plant the seed.

This treatment requires the expenditure of a little money—not very much—and a little extra labor and inconvenience. But it is certainly worth while to go to this expense and trouble when you consider what it means to you in the way of increased income from these crops. If you do not believe it, try it. Sow a part of a field of oats with properly treated seed. Sow the rest of it with untreated seed. Then, after the oats have headed, go into the field with a barrel hoop. Toss it into a porition of the treated field, count the total number of stalks inside the hoop, and the number which are damaged. Do this three times in different places in this part of the field, and figure up what percentage of the crop has been damaged by smut. Do the same thing in the untreated part of the field and figure up the percentage of damage. Then sit down with a pencil and a sheet of paper and figure up how much increase in the yield of the field there would have been had you treated all the seed sowed instead of only a portion of it.

Perform this experiment once, and there will never be any question in your mind about the advisability of treating your seed. Do it just once, and you will never again sow untreated seed.

COST OF BAD ROADS TO THE FARMER IS STAGGERING

Farmers have begun to figure the matter of roads a little differently than in former years. When the good-roads movement was in its infancy they used to ask themselves, "How much will good roads cost me?" Thanks to the intelligent propaganda of the daily and farm papers, as well as other agencies, farmers are now asking themselves, "How much are bad roads costing me?"

According to government experts, the cost of hauling a ton of farm produce a mile varies from seventeen cents, in localities where fairly hard gravel roads exist, to thirty-five cents per ton in parts of the country where the roads are in bad condition. On the other hand, in those European countries where hard roads prevail, the cost is as low as nine cents per ton per mile. The United States Department of Agriculture has estimated that the total haulage expense to American farmers for a year is approximately $500,000,000. And every dollar comes from the farmer's pocket, for he is the one great producer who cannot add the haulage expense to his wares, for the prices he gets are on a delivered basis.

If every farmer would take pencil and paper, figure the amount in tons of the produce and stock he markets in a year, multiply it by the number of miles he must haul it to market, multiply the total by twenty-five, which is about the average haulage cost per ton per mile, and then consider that he could save nearly half of this amount every year if he had an improved road all the way to his market, he would become an earnest good-roads worker.

A NEED IN RURAL EDUCATION

One obvious result of the heavy enlistment for active service of young men from the rural communities will be the necessity of taking from the rural schools boys from 11 to 14 years of age to help on the farm. In these times of sacrifice every individual must participate, and the school boy who can be of any service on the farm must "do his bit," irrespective of what his aims or aspirations may have been toward obtaining a higher education.

In all probability this break in the educational career of these boys may mean that dozens of them will never again resume their regular studies in a public or high school. Perhaps nothing is more humiliating to the sensitive, ambitious boy than to be placed in the same grade with boys and girls much younger than himself, while his previous girl classmates have advanced to higher grades. This position has caused many a farm boy to discontinue his education in the rural school.

But what assistance can we offer these boys who have already acquired a taste for education? Undoubtedly some system of correspondence courses meets the situation most satisfactorily; in fact, never before have we faced conditions where correspondence courses were in appreciable demand. This is a fruitful phase of educational work which our agricultural colleges, business colleges, and other educational institutions may well consider as a necessity of the immediate future.—Nor' West Farmer.

GOOD FENCES ESSENTIAL

It is a great handicap to farm without good fences. If they cannot be relied upon they are a source of constant worry. If there is a weak place in one of them the stock will find it sooner or later, and will break through into the adjoining field, where they will destroy a good portion of the crop; and the chances are they will overeat until their good health is impaired.

The building of fences is expensive, and it is always an economical practice to use none but the very best material—the most durable posts and a heavy, good grade of galvanized wire. While the first cost will be more when the best materials are used, the finished product will pay for the difference and will outlast two or three fences made of poor material.

Unquestionably, for general purposes, woven-wire fence should be given the preference by the farmer. There are numerous makes of this kind of fencing material, and nearly all makes can be had in a great variety of styles and grades. For the poultry yard, close-mesh wire netting in various heights is made; for fencing hog lots there is the new heavy wire fence with the lower wires close enough to keep the little pigs confined, and for general purposes over the farm there is the combination stock fence of different heights. Nearly all of these fences can be had in light and heavy grades, but in nearly every instance it is advisable to pay a few cents more per rod asked for the heavy wire fence. This kind will usually outlast by several years the lighter grades.

Our first duty is to win the war, and in this, economic production at home must not be lost sight of.

If there is any unemployment among able-bodied men in Canada this year, there is something wrong with the men.

Men who have risen from the ranks are becoming increasingly popular the world over, and generally they are most efficient.

RAISING PIGS ON PASTURE

With Supplementary Ration of Grain —Experiments in the United States

The increased price of grains necessitates a partial substitution of pasture in the breeding of pigs. The choice of grain to be fed in combination with pasture or forage depends on the nature of the pasture it supplements; when the forage is legume, such as alfalfa, clover, soy beans or cow peas, maize is perhaps the most economical cereal to use; but when the pasture is blue grass, sorghum, oats, rye, or rape, the ration should contain besides the maize some other high-protein feeds, such as oil meal, or meat meal, etc.

Experiments made at the Missouri Agricultural Experiment Station have proved that the amount of grain to be given is possibly of even greater importance than the kind of grain given for determining the economy of gains. Experiments conducted at different North American Experiment Stations have shown that even the best forage crops afford little more than a maintenance ration for pigs, and that to obtain an increase of live weight it is necessary to supplement with grain. Experiments show that the greatest economy in the cost of production is obtained by giving daily from 1½ to 2 pounds of maize for every 100 pounds live weight. As a general rule, a quantity of grain should be given sufficient to produce a daily increase of 1 pound for every 100 pounds of live weight.

Where alfalfa is easy to grow, there is no better forage for pigs. At the Missouri Agricultural Station the following results were obtained in feeding pigs with alfalfa and maize. One acre of alfalfa will feed during the grazing season from 25 to 30 growing pigs. The important point to observe is not to pasture too closely. The best results are obtained by pasturing so as to have two cuttings of hay during the season besides what is foraged by the pigs. One acre of alfalfa pastured 12 head for 168 days. The amount of grain fed amounted to half a full ration, and it required 3.07 pounds of grain to produce 1 pound increase of live weight; while with a ration of maize alone the quantity required was 5 or 6 pounds. The increase of live weight due to the forage was 597 pounds, which gave a return of $35.82, to which the value of two light hay cuts must be added.

At the Iowa Experiment Station alfalfa was pastured for 201 days, from May 7 to November 25, and gave the cheapest gains ever secured by any forage.

In 1911, in conjunction with a ration of maize cobs plus one-twentieth meat meal and swill, alfalfa gave live weight increase, when the price of maize was 50 cents per bushel, at a cost of $2.88 per 100 pounds.

Red clover ranks next to alfalfa as an excellent forage, provided it is not allowed to go to seed; conditions may be kept right by pasturing the proper number of hogs. Red clover will not support so many pigs to the acre as alfalfa, nor does it furnish forage for so long a period. In two trials at the Missouri Agricultural Station one acre pastured 11 head for 130 days, and the amount f grain required for 1 pound increase in live weight was 2.97 pounds (as a supplementary ration). In this case 572 pounds of pork, worth $34.32, were credited to the forage. The Iowa Experiment Station considers clover pasture one of the best rations available for fattening pigs on a full feed of maize.

Crimson clover sown in August and September gives abundant forage during the winter months and is largely grown along the Atlantic coast.

Rape may be considered to rank next to clover. It should not be pastured until it is from 12 to 15 inches high. With a moderate maize supplement one acre will feed 15 to 20 pigs. Experiments at various stations in North America give rape a feeding value of about $20 per acre. At the Missouri Station 1 acre of rape and oats pastured 10 pigs for 107 days. For each pound increase of live weight 3.28 pounds of maize were required, and the pork accredited to forage was 280.7 pounds—a return of $22.84 per acre. Throughout the greater portion of the Eastern and Middle Western States blue grass is well established and makes an excellent pasture for pigs if mixed with a plentiful amount of white clover. When permanent pasture is not available, a good plan is to sow a field with a mixture of grains. The writer recommends a mixture of oats, barley and spring wheat, in equal proportions, to which timothy and clover may be added. Also field peas drilled in April or early May, at a depth of at least 3 inches; with these, a week later, oats may be sown broadcast and lightly harrowed. When the pods begin to turn yellow the oats will be in the "dough" stage, and both crops will be ready for foraging at the same time.

Table I has been compiled from State and Federal reports, and is based on the experience and observations of the writer. The average weight of the pigs in this table is from 90-150 lbs.; pigs of a higher weight will consume a relatively smaller quantity of forage than will younger animals.

A solution of the problem of finding a combination of forage and maize feed to give the maximum of economy in pig-feeding is offered by the following results of experiments made at the Nebraska Agricultural Experiment Station (Bulletin 121). Pigs born in the spring and pastured on alfalfa were given supplementary rations of maize in varying proportions. The experiment was begun on July 25 and continued during 119 days, 30 with pigs in each group.

TABLE I—Pasture and Forage for Pigs

For foraging during:	Crops that may be used	Time of Sowing	Number of pigs per acre
April-May	Alfalfa	A previous year	8-15
	Rye	Preceding autumn	7-12
	Oats	March	6-10
	Rape	As early as ground can be w'ked	15-25
	Clover	Preceding season	6.10
	Blue grass	Preceding season or permanent.	8-12
June-July	Alfalfa	A previous year	8-15
	Oats	March or April	6-10
	Peas and Oats.	As early as ground can be w'ked	12-20
	Sorghum	April or May	20-30
	Rape	Early spring	15-25
	Blue grass	Permanent	8-12
August-September	Sorghum	April or May	20-30
	Soy beans	May	12-15
	Alfalfa	A previous year	6-10
	Maize	Early planting for hogging down	10-25
	Clover	Early spring or previous autumn	8-10
	Blue grass	Permanent	5- 8
October-November	Alfalfa	A previous year	8-15
	Rye	September 1	8-12
	Wheat	September 15	6- 8
	Rape	March to July	15-25
	Clover	April to May—second crop	6-10
	Pumpkins	At maize planting time	10-20
	Blue grass	Permanent	8-12
December-January	Both rye and wheat are sometimes available.		
February-March	Blue grass if not too closely pastured in spring.		

TABLE II—Results of pasturing pigs on lucerne and maize

	Group 22.	Group 23.	Group 24.
	Lbs.	Lbs.	Lbs.
Maize per 100 lbs. live weight	1.0	2.0	3.0
Average final weight per pig	101.0	120.0	171.0
Average initial weight per pig	42.0	42.0	42.0
Daily increase of weight per pig	0.5	0.65	1.08
Gain per 100 lbs. increase of live weight	132.0	220.0	336.0
Cost of forage per 100 lbs. increase of live weight	$1.05	$0.63	$0.28
Total cost per 100 lbs. increase of live weight	$2.16	$2.48	$3.10
Total profit per pig	$2.142	$2.499	$3.57

In establishing the prices given in Table II maize was valued at $16.78 per ton, and the alfalfa forage at five-tenths of a cent per head daily in group 22, at four-tenths of a cent in group 23, and three-tenths of a cent in group 24. This difference in the cost of alfalfa for the different lots was based on the amount of pasture consumed by each lot. The cost of the increase in live weight covers the cost of feed and of all the ordinary risks, but does not include labor, equipment, or interest on the investment. The pigs were valued at $5.90 a hundredweight on foot. As shown by Table II, the cost of production per unit of live weight augmented with the increase of the maize ration, but as the development of the animals was correspondingly more rapid the largest maize ration gave the biggest profits. The result is the same even when the price of maize is calculated at $23.20 the ton.

A similar experiment made under different conditions gave strikingly similar results. The writer fed different rations of grain to pigs born in the spring running on an excellent crop of oats and field peas. The supplementary ration consisted of barley, wheat, and a little meal, and the trial lasted 28 days. The supplementary ration was valued at $30 a ton, and the live weight increase at 8 cents a pound. The gross return per acre of oats and peas is obtained by subtracting the value of the supplementary ration from that of the increase in live weight, but without deducting the cost of growing the crop.

TABLE III—Results of Pasturing Pigs on Oats and Peas with Supplementary Ration of Barley and Wheat

	Group 2	Group 1	Group 4
	Lbs.	Lbs.	Lbs.
Supplementary ration: lbs. per cent of live weight.	1.0	2.0	3.0
Average final weight per pig	91.2	110.6	84.0
Average initial weight per pig	72.6	87.6	55.7
Average daily increase of weight per pig	0.7	0.8	1.0
Average total increase per pig	19.6	22.4	28.0
Gross return per acre, deducting cost of grain	$28.00	$33.06	$46.41

Since the liberal use of grain has proved profitable with alfalfal, it should prove more profitable still with pasture crops of less value. Frequently it may pay to feed grain where pigs are foraging off crops such as field peas, soy beans, and even small grains.

TIMELY SPRING TOPICS DISCUSSED

Practices That Promote Early Maturity in Grain

Lack of moisture causes low yields in dry areas and in dry seasons. Lack of heat (frost) causes low yields and poor quality on some heavy soils, particularly in the northern parts of Western Canada and in the more humid regions.

The practices that make the best use of the moisture are not necessarily the most desirable where fall frost limit the yield or quality. Some of the practices of "dry farming" are directly the opposite to those that are considered best in "northern farming."

All of the extreme dry farm practices should be followed only in southeastern Alberta, southwestern Saskatchewan, parts of southern Manitoba, and in some local relatively rock-free areas north of these parts. The man on the land must strive to learn, if experience has not already taught him, whether frosts are as much or more to be feared than drought. If they are, "dry farm" practices should be modified in one or more of the ways mentioned below.

Thick Seeding

As much as two and a half bushels of wheat and four bushels or more of oats is sometimes used on the heavy, rich, moist soils of the north. Of course, this is too much for any area or any soil where fall frosts are not feared. In the year 1911, when much of the western wheat crop was frozen, wheat seeded at two and a half bushels per acre on the University farm ripened ten days before the same variety sown at one-half bushel per acre. The yield and quality were almost much higher from the thickly sown crop.

Packing

Firming the soil either before or after seeding or even after plowing the fallow almost always results in an earlier crop. It may or may not be heavier. At Indian Head in 1909 barley crop packed twice after seeding ripened five days earlier than the same variety unpacked, and barley packed once after seeding ripened two or three days earlier than that left unpacked.

Early Seeding

It is not always the case, but the crop that is sown earliest generally ripens first. A field sown two weeks earlier than another will not ripen two weeks earlier, but it will ripen a few days earlier.

Press Drill a Help

The soil in the spring is warmer near the surface than further down. Yet seed must be put down to reach the moisture. A press drill will bring the moisture nearer the surface, where the soil is warmer, and thus encourage earlier maturity.

Less Frequent Fallowing

The fallow crop requires a longer time to mature than that grown on any other land. The less frequently

(Continued on page 617)

HORTICULTURE.

PROPER CARE OF SHADE TREES

By Carl Banwart, of the Newark Shade Tree Commission.

Examine your tree for points every month, and see what percentage it will have out of a possible one hundred. Each of the following, if answered unequivocally "Yes," gives your tree 8 1-3 per cent toward the one hundred. These questions are put in order of their importance.

1. Is the opening around your tree of standard size? Standard size is 4 feet square for a tree of 6 inches (or less) diameter; for every 1 inch increase of such diameter an increase of 1 square foot in area of opening.

2. Is the ground in this opening well loosened to admit air and water?

3. If the tree is surrounded by grass, is the sod open around the trunk?

4. Does the tree get a good proportion of the rain which falls on the sidewalk, or does the water run over the curb into the gutter?

5. Is the tree protected with a tree guard? Guard must be six feet high and not too tight. Tree must be protected from chafing by guard.

6. Is the tree free from borers? Borers can be deteced by sawdust coming out of holes in the trunk. Watch for the borers from April to November.

7. Are the trunk and the branches cleared of all cocoons, egg masses, larvae, caterpillars, beetles, scale?

8. (a) Is the head free from all dead wood, has it been pruned by an expert, and how do you know he is an expert? Find out how a tree should be pruned. Are all the cuts painted? (b) Does the tree stand perpendicular, and is its present place intended to be its permanent home?

9. Have the scars from horse bites or other injuries been cleaned out and painted to prevent harboring insects and to stop decay? If there are large cavities these should be filled with cement.

10. Does the tree remain green and in full leaf to the middle of October?

11. Have you put as much nourishment into the soil as the tree needs for the year? Give it a treat: dig in wood ashes, ground bone, or well-rotted manure.

12. Are any wires interfering with your tree, either by swaaying or by electric current? Are there any gas leaks?

Here are twelve points of a good street tree. The total percentage, if below par, reflects on the man, not on the tree. The tree always does its best. Man forgets that he has taken it out of the God-made forest, where it could and did care for itself, and has placed it in a man-made city, where it is dependent on man's care for thrifty growth."

SUMMER PRUNING FOR APPLES

Summer pruning as contrasted with the regular practice is the pruning of trees while in foliage. Its influence upon the tree in many respects is opposite to winter pruning. The latter stimulates wood growth, while the former tends to lessen wood growth.

As a rule, any practice that checks wood growth tends to induce fruitfulness. Growers have taken advantage of this fact for many years. In England the result is obtained by root pruning.

The method consists in digging a trench around the tree at some considerable distance and severing some of the roots. This interferes with the food supply and necessarily reduces growth.

Widely Practiced in Different Sections

In the famous Ozark apple region of Missouri and Arkansas the same result is attained by ringing or girdling the trunk or main branches of the tree, thus checking the downward flow of sap. The roots in this way are partially starved, and are therefore unable to induce a strong wood growth the following season. The work is done during the growing season, and as a result the wound soon heals over.

The growers in the Pacific coast region practice summer pruning to check wood growth. A complete or partial defoliation by insects, disease, or spraying injury during the early summer seems to have the same effect.

Just why the checking of the wood growth should induce the formation of fruit buds, and how it exerts this influence, is not well understood The theory has been advanced that there is some inherent tendency on the part of the tree to reproduce itself before it dies, and that when anything interferes with the natural processes the tree prepares for death. This is not a satisfactory explanation, and it is hoped that the physiologists may be able to throw some light on the subject in the near future.

Handling Young Trees

I believe that with young trees we should do very little winter pruning, and that we should direct the growth largely by summer pruning. The work to be most effective should be done a little each year, and at just about the time the tree completes its annual growth, which in this section is about the first week in July.

If done too early it will defeat its aim and produce a strong growth of shoots. If done too late it forces out a soft growth which is likely to be winter killed. The object of the work at first should be to direct the growth and later to induce fruitfulness. Only strong growing trees should be pruned during the growing season, remembering that it is a devitalizing operation and may easily be overdone.

With regard to bearing apple trees the necessity for summer pruning is less pronounced if not entirely eliminated. Since our mature trees tend to overbear, there is no necessity for inducing fruitfulness, and winter pruning would therefore be the most logical practice.—C. D. Jarvis, Connecticut Agricultural College.

THE HOME GARDEN

Peas in Potato Field

For the past two seasons I have been interested in the method my brother in Vermont used to grow his market garden crop of green peas. He plows his sod ground in the fall for potatoes, harrow in cow and horse manure. The next spring, just before planting time, he marks the ground 3 feet apart each way, dropping one piece of potato with two eyes to each hill or cross mark. He then has a man follow with peas, which have been soaked for a day in soft water, dropping not more than two peas at each two hills apart, fertilizer having been dropped before the potato. The hills are now covered by drawing the loose dirt over seed with the hoe and giving each hill a tamp with the hoe to pack dirt onto seed.

The peas and potatoes come up together, a little in peas' favor. He goes through twice with the cultivator and once with the horse how or shovel plow. If the peas are not of extra late variety, and season not too dry, they come up enough ahead of the potatoes so the cultivator and shovel plow do not cover them while going through. For spraying the potato vines he uses a commercially prepared liquid of the bordeaux type, which does not hurt the pea vines in the least.

He goes through the rows twice a week gathering peas for market, making a good revenue from peas to the acre. The pea vines do not choke the potato vines, and I believe help them, because in the hills where pea vines grew the loam seemed to be much lighter and porous. At potato digging time in September I measured the marketable potatoes; they averaged a bushel to 18 hills, or 268 bushels to the acre, which, considering the season, showed up much above the average.

The ground was rather light, receiving only a light manuring in spring, fertilizers put on at the rate of 600 pounds to the acre. I believe the peas did a double service, giving a money crop and at the same time helping along the potatoes. The tubers were the smoothest I have seen harvested. It seems this method should prove profitable to those raising potatoes by the drill or furrow method.—Walter Johnson.

GARDENING FOR BEAUTY'S SAKE

Every one knows the healing qualities of the soil. The sting of the bee and many other insects will be drawn out in less time by a mud plaster than by any of our latest known antiseptics. All the animals instinctively turn to the soil to cure their ills. Dogs bury themselves in it to heal skin trouble and rid themselves of vermin by soil baths. Handling soil is good for any one, and women are taking more and more to the occupations that mean a living fro mthe soil. Cultivating flowers and small fruits are foremost among the things women are undertaking. Several colleges to teach women floriculture have come into existence in the last six years because of this.

Flowers and children are always associated, and the cultivation of either should be a woman's forte. Beside the health-giving properties of handling the soil is the interest created in planting the seed and watching its unfoldment. It is quieting also to the nerves to attend plants—they are always responding to your care and giving such a return on the labor and time expended that the pleasure is only known by those who love them an dwork for them. Any woman who is run down, grown morose, and has lost her grip will find a new world open for her by cultivating plants. The daily revelation that is changing from start to ending of each season will keep her from mental depression, and the life with the beautiful will reflect itself from her countenance. It is a beauty tonic—this cultivation of flowers.

And now, with the air so full of the promise of new life, with the summer so near, there is an added incentive to get out into the garden and bring out the soul of the earth into flowers and plants. It will pay you a hundred fold in beauty and health.

A DELIGHTFUL SALAD PLANT

Any one unacquainted with cress has a pleasant surprise due him, if he will try it out in the garden next season, or plant some in pots in the house for winter use. The leaves are pleasantly pungent and may be used freely as a condiment, served with salads, or for garnishing.

There are several varieties of cress—the ordinary garden variety and the water cress. The seed is proverbial for its quick-sprouting habit. If cress is wanted in its prime continuously, seed must be sown every few days, or at least once a week, and sown thickly. It may be grown in large flower pots or boxes, in any light and reasonably warm place. The soil should be kept moist. Water cress is often grown in shallow waters, but the ordinary garden variety, more suitable for pot growing, simply requires generous moisture.

IRON AND APPLE COLOR

A writer in one of our American exchanges says:

"A Canadian paper is authority for the statement that the use of iron dust about the roots results in a greatly heightened color, as well as in longer keeping qualities, of the apples. If the use of our waste iron will improve the coloring of our apples, thus adding greatly to the attractiveness of their appearance, and also add considerably to the length of the time during which they can be used, let it, by all means, be used for this purpose."

Following is the reply of H. P. Gould, Pomologist in charge of Fruit Production Investigations, Washington:

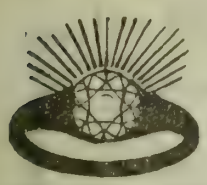
Concerning the results of applying to apple trees liberal quantities of volcanic dust, containing a large percentage of iron, it is my impression that the high color of the fruit which the Canadian fruit grower attributes to this treatment occurred in spite of it rather than because of it. I do not see how the treatment mentioned could possibly have any direct influence on the color of the fruit. It is quite true that soils which contain a large amount of iron oxide are generally good fruit soils, other things being equal, but I do not think that they are favorable fruit soils because of the iron. The iron is present in the form of oxide, because the soil is well drained and well aerated. Such soils are usually good for fruits. The presence of the iron oxide is merely an indication of the character of the soil.

This proposition is about on a par with the notion frequently put forth in the past that driving a large number of rusty nails into a fruit tree increases its fruiting capacity and the quality of the fruit, because of the presence of the iron in the tree. The facts are that the results of this treatment, in most cases at least, are due to the checking of the growth of the tree by the injuries received rather than because of the presence of iron in the tree. It is my opinion that for most soils iron would have no particular effect upon the growth of the tree or its fruiting capacity.

THE COST OF GROWING APPLES

Under good orchard management where there are 200 or more trees in the orchard, it costs Maine growers approximately $1 per barrel to produce apples when the production is two barrels per tree; $1.25 per barrel when the production is one and a half barrels per tree; $1.50 per barrel when the production is one barrel per tree; and $2 per barrel when the production

RED ROSE TEA "is good tea"



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Fruit Packages

As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,
HANTSPORT, N S.

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10 DAY'S TRIAL. If owner is not entirely satisfied after riding any Hyslop Bicycle 10 days it can be returned and money will be promptly refunded.
TWO CENTS is all it will cost to write us a postal and we will mail free, postpaid, catalogue and colored art folder showing *complete line* of bicycles, tires and supplies and particulars of *most marvelous offer* ever made on a bicycle. You will be astonished at our low prices and *remarkable terms.* MAKE MONEY taking orders for Bicycles, Tires and Sundries. DO NOT BUY until you know what we can do for you. Write to-day. **HYSLOP BROTHERS, LIMITED**
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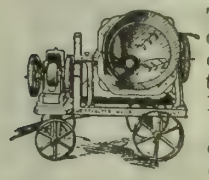
Famous Little No. 0 Power Mixer



Turns out a batch of thoroughly mixed concrete in less than one minute. Discharges from either side, which other mixers do not do. Also mixes your lime and cement mortar to perfection. Light, durable, highly guaranteed, and has a big reputation. Adapted for a hundred different kinds of jobs. A great money saver. Write for our special offer.

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is only one-half barrel per tree.

A tabulated statement of costs in nine orchards made by the Maine station in co-operation with fruit growers shows that the cost of production varies closely with the production per tree. Of course, considerable depends on age and condition of the trees, as well as the distance from shipping station.

The crop in 114 from 4409 trees was 7692 barrels, an average of one and three-quarter barrels per tree. The average total cost per barrel was $1.11, and the total cost per tree $1.94. This included pruning, fertilizing, hauling barrels, interest, taxes, etc. Among the leading items of cost per tree were pruning, 5 cents; fertilizing, 13 cents; spraying, 10 cents; picking, 15 cents per barrel; packing, 13 cents per barrel.

It cost $1.2 per barrel to produce apples in a 10-acre Baldwin orchard in New York under the supervision of the experiment station over a ten-year average. There were 27 trees to the acre, and the orchard was valued at $500 per acre.

The following is a summary of the cost sheet for a barrel of apples: Interest on investment, 21 cents; taxes, 1.2; tilling, 6.3; pruning, 3; spraying, 9.6; cover crop, 2.3; superintending orchard, 25; picking, packing, sorting and hauling, 24.4; giving a total of 93 cents a barrel.

The average price of barrels for 10 years has been 36 cents each; the price fluctuating from 30 to 40 cents. Adding the cost of the barrel to the cost of production, we have $1.29 as the total cost of a barrel of apples at the shipping point.

The average yearly production has been 116.8 barrels per acre worth $2.60 per barrel for the 79.2 barrels of barrel stock and 72 cents a barrel for the 37.6 barrels of cider and evaporator stock. This leaves a net profit of $95.60 per acre, which, added to the $25 interest on investment, gives $120.60, or over 24 per cent on $500 per acre as the annual dividend for 10 years, in addition to paying for labor and $300 for supervision.

PROTECTING TREES FROM BORERS

Apple trees may be protected from the flat-headed borer by painting the trunks with a heavy application of paint that will remain unbroken for two or three months and keep the female from laying her eggs. Pure white lead and raw linseed oil, mixed rather thick, will not injure the trees, and when applied to young, smooth bark will form a protective coat during the egg-laying season.

Before painting, however, the earth should be removed from the base of the tree for a depth of from three to four inches. The surface of the trunk thus exposed should be first scraped and painted and the earth then replaced. This is necessary, for the beetle occasionally lays her eggs under instead of above the ground.

CUCUMBERS IN THE CORN FIELD

In experimenting on a filler crop, I tried the cucumber vine with flint field corn. I planted cucumber seed every two or three hills at the time of planting corn; another section I planted the seed each two or three hills at the second time of going through with the cultivator, making a shallow hole with a pointed stick near the hill of corn and tamping the foot on same. I cultivated corn until it commenced to tassel, and was not bothered with the cucumber vines pulling up. At corn cutting time I found the cucumber vines 12 to 14 inches long and bearing one to two very fine cucumbers.

From seed planted at time of planting corn I harvested a splendid crop of yellow ripe cucumbers for making sweet pickle. From the other planting I harvested a crop of clean, crisp, green cucumbers, which for size would take a prize at the fair, and demand a good price in market at that time of year.—William Johnson.

APHIDES SPREAD THE BLIGHT

Investigations carried on by Prof. J. H. Merrill, assistant entomologist of the Kansas experiment station, show that the spread of twig blight in apples is largely due to presence of aphis. At least, he found that in orchards which were sprayed with Black Leaf 40 to control the aphis there was little or no twig blight.

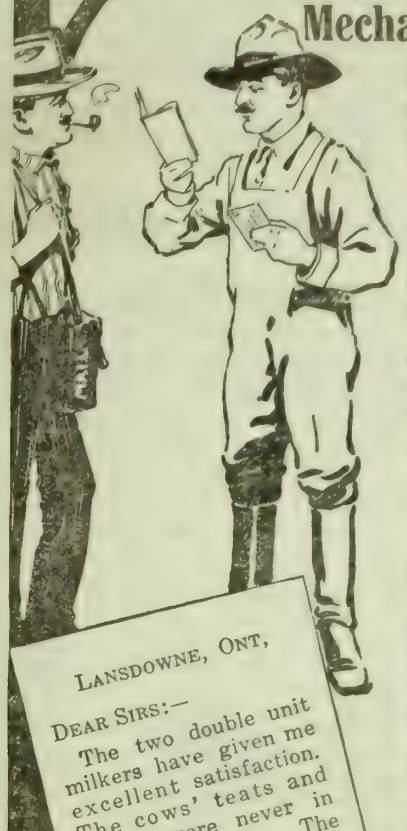
The twig blight was particularly bad in many Kansas orchards in 1913, and again in 1915. Jonathan apples were especially subject to it. A few growers sprayed their orchards in 1913 with a nicotine spray to kill the aphis, but they had practically no blight. There was little blight the following year.

Last year the conditions were particularly favorable for the aphis, and they were present in large numbers. Many more fruit growers sprayed than in 1913, and in their orchards there was little evidence of twig blight.

It is assumed from these facts that the aphides carry the germs of blight and commonly infect the twig either through the new leaves or growth, or through the blossom. The nicotine spray is very effective in killing them, and should be used promptly when their presence is discovered.

FARMERS

Have you had the Empire Mechanical Milker Booklet?



It is free, it is interesting—it is full of facts that every wideawake farmer and dairyman should know. Write for it to-day.

Empire Mechanical Milkers have solved the problem of milking. They free you from dependence upon hired help, and make it possible to keep more cows.

With one double or two cow unit, one man or a boy will milk 20 to 30 cows in an hour, and one man can operate two double units. See what a saving this would mean to you in wages if hired help does your milking; or in labor, bother and time if you do it yourself?

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DEAR SIRS:—
The two double unit milkers have given me excellent satisfaction. The cows' teats and udders were never in nicer condition. The Empire Milker is a boon to any farmer, as one man can milk my 22 cows in 35 minutes.

L. B. WEBSTER.

JASPER, ONT.

GENTLEMEN:—
I purchased one of your milker outfits last spring. I would have had to dispose of my cows had I not bought it, as I had no help to milk. The machine is doing all you claimed for it and I believe it is the best on the market.

WILLIAM KING.

EMPIRE MECHANICAL MILKER

takes the Drudgery out of Dairying—cuts the wages bills—protects the milk from stable air, dirt and germs and usually induces cows to let down more milk.

You, or your Boy, or one hired man, and an "Empire Milker" could take care of a pretty large herd and do it easily. The Empire successfully imitates the action of a sucking calf and is easier on the cows than hand milking—it does its work thoroughly and well — milks evenly, smoothly and naturally — it is good for the cows—saves you money—increases your profits and makes you independent.

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48

PROTECTION FROM CUTWORMS

Protect as many plants as you can by wrapping the stems with strips of tough manilla paper about three inches square. This will protect tomato, cabbage and other plants. To 30 pounds of bran add one pound of paris green, two quarts cheap molasses, and water to make a mash. Lay this down at night, putting a teaspoonful or less in a place. Strew it thinly along rows of lettuce and similar plants. Mix only enough to use at one time, and put it out twice a week as long as the attacks continue. It will kill chickens or fowls if they get it, but in a few days it dries up, and they will not molest it.

This is most effective if put down early in spring before there are any plants for the cutworms to attack.

The important point in picking strawberries, and other berries, too, for that matter, is to get all the ripe fruit that is ready for market every day, as overlooked berries are usually over-ripe by the following day.

The Salt is mighty important
Windsor Dairy Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED 179

DAIRYING.

CONSTANT CULLING AND DISCARDING IN GRADING UP THE HERD

Each Individual of Every Generation Must be Carefully Sized up to Effect Higher Standard

A herd of full-blooded registered dairy cows is always a desirable possession, but very few farmers are financially able to own the same. They must be content with common stock, yet this need not mean that they shall work with cows that hold a low position as result givers. By careful selection of the cows and sire to which they are bred, it is possible to build any dairy herd up to a point where it equals in the results obtained, if not in blood, any registered herd.

The work of building up a herd from common stock requires much careful study and observation. The owner must be able to select a good cow by her general appearance. Some of the things that he can judge by are a large and capacious barrel, open and rather wide spaced ribs that spring well downward. A rather long head, a long and slim neck, and limbs that incline to fine. A nice, soft hide and silky coat may usually be considered as indications of quality in a cow. Good stamina is usually indicated by a generous width through the lower part of the chest, a bright full eye, and an active carriage.

The selection of a sire for use in the building up of a herd is of the utmost importance, and must not be done without careful consideration of the subject from the various standpoints. Select the breed that would seem best to meet the requirements as to milk or butter, as your market may demand. When a breed has been chosen and a sire selected, the program should not be changed, for that would annul, in a great measure, the work that had already been accomplished.

The individuality of the sire should be considered with care. Not only should he be as nearly perfect a specimen of his breed as possible, but he should possess all of the indications of stamina and bodily vigor. His ancestry should be looked into, too. The sires should have been result getters and the more ancestral dams he has that have records of large quantities of rich milk and persistence in milk-giving the more desirable he will be.

If the system planned out is carefully adhered to, the development of the herd should prove rapid. Each successive generation will show improvement, although this will be much less marked in after years when the herd has reached a point much nearer to perfection. A continuous sizing-up of each individual of every generation if a high quality of standard is to be reached and maintained. There must be a great deal of culling and discarding. Frequently the eye will be able to decide that a calf is incapable of being made into a good member of the herd and can be discarded without any further consideration. Other individuals require further observation, but as soon as their unfitness is recognized they should also be discarded.

In making an effort to improve the dairy herd the dairyman should set a standard of attainment—the highest possible. If this be done more and more pleasure will be derived from the work as it proceeds. In the end the satisfaction of mind with the results obtained will be worth as much as the increase in financial results.—Sherley Connell.

MATHEMATICAL SELECTION OF SWISS CATTLE

For some time the Swiss Department of Agriculture has been attempting to appraise its breed of cattle through federal examination by means of a rational mathematical system, and because of the excellent results obtained this method has recently been made official. Several French districts have even adopted this procedure to the exclusion of all others used for expert selection. This new method has for its purpose the determining and expressing in decimals of the correlations which exist between the conformation of the different parts of the body of the animal and its fitness. The instrument most practical for this is the measuring cane invented by A. Deriaz, of Lausanne. This is composed of a simple rod, grooved and graduated, provided with two perpendicular arms. One of them is fixed permanently at one end, and the other can glide along the rod and be stopped at any desired point.

The measurements which they take on the animal with this instrument are as follows: First, measurements of the length of the body, chest, loins and quarters. Second, measurements of the height of the withers (from the ground to the highest point on the animal), of the knee (from the ground to the lower edge of the joint), of the loin and of the tail-head. Third, measurements of the width, by means of the two arms of the instrument shown, of the hooks, pin bones and thighs. Fourth, measurements of the head, principally its length, its width between the base of the horns, and the width of face. By virtue of these given, and proportioning them to the fundamental measurement—the length of the body—one can understand in a logical fashion the value of this study of the bovine race.—Breeders' Gazette.

THE BIOGRAPHY OF "BOSSY"

As one of the earnest workers of the farm, I feel I am not understood. These people around the place scarcely appreciate the responsibility they assume. They are lax in their duty. Perhaps we animals are less dumb than humans might suppose.

Take today, for example. It has been filled with innumerable errors of judgment. Why do not people learn to know that little things make up the true greatness of this busy old world? I did not sleep well last night. Bud had left one of his measures in the stall, and several large stones must have gotten mixed with the bedding. As a consequence, I awoke bruised and sore and restless beyond the telling.

Oh, you didn't think a little thing like that would make any difference, eh! Well, it does. Bud came in at five o'clock, and a little later, when he saw the rough place on my coat where the measure had lacerated the skin, he swore—the way Bud knows how to swear—and figured that I had been kicking the bars and "thrashing around a bit."

A Little Hole in the Floor

While I'm on the subject, I want to mention that miserable little hole in the floor of my stall, where the wood has rotted away. It isn't that I envy the Jones farm cows in their immaculate concrete home, with everything as white and as tidy and as clean as a human's bathroom. Oh, no, it isn't that.

I can do very well in a wooden stall, especially as Mr. Bob hasn't been doing very well of late on the farm, but several times a day I get my foot caught

The Importance of FRESH oil

Oil is composed of very small balls, or globules, which roll between the parts oiled—that is the action of lubrication. As soon as these balls become broken, as they quickly do, they are useless—worse than useless for they keep away fresh oil. That is why the old-time splash system of oiling fails—it uses and reuses "worn-out" oil. Following the lead of big automobile makers, we use in the "Superior" Separator

"Direct-to-Bearings" Oiling System

Fresh oil is dropping on the important bearings all the time, and yet less oil is actually used in a year than with the "Splash" or "Bath in oil" system.

Write to-day for book of "SUPERIOR" Separator facts, showing why our machine is not only the easiest to turn, but skims the closest of all.

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The Daintiest Decoration

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responds to the Artistic taste of the decorator and householder, giving a soft, velvety, flat effect on Halls, Living Rooms, etc.

"FRESCO-TONE" is highly sanitary and as it is easily kept clean, this frequently saves expense of repainting.

We would be pleased to furnish color schemes and suggestions for Interior Decoration in "FRESCO-TONE" on application.

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PAINS AFTER EATING

WIND IN THE STOMACH—ACIDITY, HEADACHES—CONSTIPATION

ARE SIGNS OF INDIGESTION.

Indigestion—the complete or partial failure of the digestive processes—frequently throws out of gear the whole machinery of the body. You can't enjoy the vigour and vitality of good health unless your stomach, liver and bowels do their work regularly and efficiently.

MOTHER

SEIGEL'S SYRUP

As a digestive tonic and stomachic remedy, Mother Seigel's Syrup is esteemed in tens of thousands of homes, wherever the English language is spoken. If you suffer much or little from disorders of the stomach, liver or bowels, try the effect of taking 15 to 30 drops of this famous remedy in water, after meals, for a few days and note its beneficial effects.

4015

ASSISTS DIGESTION

The new 1.40 size contains *three times as much* as the trial size sold at 50c per bottle.

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it is the trained man who leads. This school makes a specialty of training young men and women to fill responsible, good paying positions. Prepare yourself for one of these by taking a course at the

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The Arts Course may be taken by correspondence, but students desiring to graduate must attend one session.

SUMMER SCHOOL JULY AND AUGUST — GEO. Y. CHOWN REGISTRAR

IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARITIME FARMER.

in that ugly hole. Rats come up through it and fuss around during the night, and they have knawed at it until it is larger than Bud realizes.

Late yesterday evening, after milking time, I made a misstep, and my hoof ran down into the treacherous place. I kicked with fright and attempted to pull my foot out again. When I did manage to liberate it I was lame. Poor Bud examined that leg and shook his head, and said "something had bit me." Holes in stall floors are so easy to patch up!

I want to mention something here before I forget about it. I know you'll laugh at me and say I'm a sentimental old fool, but I must speak out. Why can't Mr. Bob hire a man about the place who really likes and loves animals? When I was being led down the hill from our barn to the pasture lot I was a little slow, I fancy.

Not far from the sheds is a bad gully hidden by high oats, and accidents have taught me a lesson. I go slow when I reach that part of the lot. It's so easy to break a leg, you know. Kitty did in this same gully less than two years ago. Well, Bud was frightfully impatient. The moment he felt me lagging he gave the rope a sharp yank. I wasn't expecting it, and it hurt. My neck is a bit sore from too many of Bud's yanks.

Friday noon I had an evidence of Mr. Bob's goodness of heart. In some way —I can't tell you how—I managed to tangle myself all up in my pasture rope. One loop had caught in my horns, and another was wrapped about around my front legs. I was most uncomfortable.

Mr. Bob was seeing about a new artesian well at the foot of the hill. He happened to look up and across to the lot. In a moment he saw my predicament and came running over.

"What's the matter, old girl," said he, putting his arm about my neck and patting my perspiring flang. "In bad, eh? Well, we'll just fix this up in a jiffy."

With that he untangled the rope, and saw to it that it could not happen again, no matter how or where I roamed.

Good Hired Help a Problem

I suppose it's very difficult to secure the right kind of helpers—men with sympathy and understanding and the ability to think further than the surface duties of the farm. But Mr. Bob is an ideal chap for a dairy. He'll own a great place some of these fine days, and have hundreds of pedigreed animals.

One noon, as an example of his thoughtfulness, he saw that I was miserable as I panted in the field near the stone wall where Bud had tied me. Not a bit of shade, and it was sweltering hot. Bud had not given me a thought. It was one of the days when they would not permit me to roam around free in the big lot, and I had eaten every snip and blade of grass in the circle allotted by my pesky rope.

One when Bud passed I called to him. I never wanted to speak his language so badly in my whole life. I wanted to say:

"Please, Mr. Bud, won't you take me down to Mill Creek and let me have a drink. It won't hurt me just now if you are careful and watch. I'm so sick from the sun beating down on my head that I feel as if I couldn't live through it. Look, Mr. Bud, can't you see how pathetically miserable I am? It is agony. Not a bit of shade or shelter, and I'm tied and can't go in search of any.'-

Bud was thinking of something else. I followed him with my tired eyes as he mopped his perspiring brow and went staggering up the hill to the dairy house. In a little while he reappeared, standing at the door under that sprawled-out chinaberry tree, and he drank two small pails of cold milk without so much as taking a breath.

(Continued on pag. 616)

What a DE LAVAL Cream Separator SAVES Over any other Separator or Creaming System

QUANTITY of cream that no other separator will recover completely, particularly under the harder conditions of every day use.

QUALITY of cream as evidenced by De Laval butter always scoring highest in every important contest.

LABOR in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

TIME by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

COST since while a De Laval Cream Separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and need to be replaced in from one to five years.

PROFIT in more and better cream, with less labor and effort, every time milk it put through the machine, twice a day, or 730 times a year for every year the separator lasts.

SATISFACTION, which is no small consideration, and can only come from knowing you have the best separator, with which you are sure you are at all times accomplishing the best possible results.

EASILY PROVEN—these are all facts capable of easy demonstration and proof to any user or intending buyer of a cream separator. Every De Laval agent is glad of a chance to prove them by a De Laval machine itself—without the slightest obligation to the prospective buyer unless entirely satisfied.

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Sole Manufacturers for Canada under HINMAN Patents

LIVE STOCK.

SHEEP PROFITS $5.00 PER EWE

Editor Maritime Farmer:

I was much interested in the letter of your Cape Breton correspondent describing his success with sheep in last issue of The Farmer. Cape Breton certainly must be a great place for growing wool, when his ewes averaged 8 lbs. per fleece. I trust he has not made a mistake in the weighing, for I consider an average of 8 lbs. for ewes bearing lambs remarkable. My own sheep are considered good, but they do not come up to that average, though the shearer said that my ewes were the best she has ever sheared. I weighed several of the fleece shorn only last Tuesday, 6th, and the best of the fleeces only weighed as much as eight pounds, while the average was considerably less.

The increase in the flock—50 lambs from 50 ewes—was also extraordinarily good. It is no use counting dead lambs; it's the number saved that counts. In my own flock this year I have one lamb for each ewe in the flock, and this I consider is as good as I have ever done—100 per cent strong, healthy lambs from a flock is good enough for me. I am not partial to twin lambs. I prefer my ewes to have only one lamb.

Your correspondent made good sales. As he butchered all his lambs, he must be an expert, because young lambs put on the market must be well butchered, and he has charged nothing for the butchering, though he credits the pelts at 65c each, which tends to swell the receipts.

I consider his feed bill unnecessarily expensive. I feed scarcely any hay to my ewes, simply early cut oat straw, turnips, and a little oats daily. I continue the oat feeding up to and a little past lambing time, which is in the first half of May.

If his figures are correct, your correspondent has done remarkably well with his flock. I think, however, that my own profit PER EWE will be, or usually is, much greater, probably because of my less expensive feed bill. Calculating roughly, I think my profits per ewe is about $5.

NANCY McDONALD, P. E. I.

Editor's Note:—The section of country from which our Cape Breton correspondent wrote is within easy driving distance of the best markets in Canada—the Sydneys and adjoining mining towns, with a population of over 75,000 people, many of whom are engaged in the steel and coal industries. Farmers in these districts frequently butcher their lambs, sheep, cattle, and pigs and market the meats themselves at the highest retail rate to hotels, boarding houses, restaurants, and private residences in the above-mentioned towns. A true case of direct from producer to consumer.

EXPERIMENTS IN CALF RAISING

Results of calf-feeding experiments conducted by the West of Scotland Agricultural College Farm, Kilmarnock, in 1914 and 1915 are published as a bulletin. The object of the test was to find out a cheap form of calf rearing in order to tide the calf over that critical period when it consumes milk foods or their substitutes. Some sixteen Ayrshire calves were chosen, and new milk was given to all for the first four weeks, this being given at blood heat. The first experimental ration consisted of whole milk, the second of separated milk and crushed oats, the third of separated milk and maize meal, and the fourth of whey and special calf meal. The average live weight of the calves at the end of the first four weeks was approximately 110 lbs. Hay was added to all the rations when the calves were six weeks old, and two weeks later a little linseed cake was introduced.

Whole-Milk Feeding

About 1¾ gallons per calf daily over the sixteen weeks were given. Hay at the rate of about 2 lbs. per calf was consumed, and of linseed cake about 1 lb. per calf daily. In 1914 the average weekly increase per calf was 14.85 lbs., and in the subsequent year 12.6 lbs. Valuing whole milk at 7d. per gallon, linseed cake at £10 per ton, and hay at 60s. per ton, the average cost per lb. live weight increase was 5.4d. in 1914 and 7½d. in 1915.

Lot 2, fed on separated milk and crushed oats, as well as hay and linseed cake, gave as the result of the sixteen weeks' feeding in 1914 the average weekly increase of 12.7 lbs., and in 1915 12.1 lbs., at a cost per lb. live weight increase in the former year of 3.5d., and in the latter of 3.67d.

Lot 3, on separated milk and maize meal, at the rate of about two gallons of separated milk and ½ lb. of maize meal per calf daily, with hay and linseed cake, made the average weekly increase per calf of 12 lbs. in 1914, and 12.1 lb. in 1915, at a cost of 4.26d. per lb. live weight and 4.06d. respectively.

Whey

Lot 4 were fed on whey and special calf meal, but as it was thought that the whey had a scouring tendency, and was not very suitable for the purpose, the experiments in 1915 were slightly changed in the transition period from whole milk to the new rations, and the result was certainly better, but not very much so. Twelve weeks' feeding in 1914 produced an average weekly increase per calf of 9.5 lbs., and eleven weeks' feeding in 1915 gave the average weekly increase of 9.7 lbs. The cost per lb. live weight increase was 4d. and 4.3d. respectively.

Conclusions

Professor Patterson and Mr. Lindsay Robb say: That the cost of rearing calves on whole milk is prohibitive in the case of ordinary commercial animals. That separated milk and crushed oats, or separted milk and maize meal, make suitable and economical rations for calves, provided (a) that the calves are fed solely on whole milk till they are four weeks old, (b) that the change of ration is gradually effected, and at least two weeks taken to complete it; (c) that hay and linseed cake are introduced into the ration after six and eight weekly respectively. That the live weight increases from the maize meal and the crushed oats rations are practically identical when ¾ lb. crushed oats are fed as against ½ lb. maize meal. That calves retain their bloom rather better on crushed oats than on maize meal, but that both rations produce very fine calves. That the whey ration fed cannot be recommended as a suitable one until calves are at least eight weeks old—(a)b because of its tendency to scour the calves, (b) because of the somewhat ragged and baggy appearance which attends its use, and (c) because calves fed on this ration are apt to get down in condition.

Barrett
Made in Canada

Money Savers for Farmers

Practical Parables

A FARMER went forth to inspect his farm. It was near the end of his fiscal year and albeit he thought he had left nothing undone he found that things were not as should be. His stock was lean, nervous and not yielding great profits. His fences were straggling and ready to fall, having rotted in the posts. His harrow and certain expensive implements were rusted for he had not painted them. His barn admitted water at the roof, and likewise his own home, and that of his poultry. And the little gutters that should carry the water from roof to ground did leak too and were in sore need of repair. And even more so, the roofs on his many buildings which had cost much gold and labor, were not attractive nor yet durable. So the farmer was exceeding down cast. And it came to pass that a more successful neighbor came unto him and said:

"A LARGE part of my profits are due to watching the little leaks. Barrett Money Savers helped me. Take Carbonol for instance. No farmer should be without it. It has all the merits of carbolic acid *without the danger*. Effective in a hundred different places. If you cut your hand, apply Carbonol in solution. If your live stock get bruised, Carbonol will fix them. It disinfects sick rooms, and makes house cleaning easier. Begin to economize today by buying Carbonol.

"A LEAKY roof means more than incoming water. It means outgoing money for repairs or damages. Begin right with Amatite, the ready roofing that needs no paint. Put Amatite on your steep roofs and sidings. Wind, rain and weather can't hurt Amatite. Its sparkling mineral surface improves the appearance of any building and guarantees durability. Made in rolls of 110 square feet, with galvanized nails and cement in the centre. Easily laid without skilled labor. I ended my roofing troubles with Amatite.

"THE greatest enemies to live stock and poultry are lice, mites, vermin and flies. I keep my live stock clean and happy by spraying them with Creonoid, and I spray my roosts regularly. It is the most economical and effective animal antiseptic I have ever seen, and I've tried them all. All you have to do is spray your stock once or twice and their pests will go away, leaving your hens, cows, pigs and horses healthy and happy. Be sure to follow directions carefully. There are many other valuable uses for Creonoid and you had better ask them to send you their booklet on the subject. Don't delay when the solution of your problem is so easy.

"I USED to help the Farm Machinery Company pay dividends until I was advised to try Everjet Elastic Paint. You see metal seldom wears out; it rusts out and Everjet positively prevents rust. It never peels, scales or cracks. There is more merit in Everjet than I can tell you of. Everjet is especially recommended for use on 'ready roofings' because of its low price and great covering capacity. Protect your roofs and machinery with Everjet.

Barrett's Grade One Liquid Creosote Oil

"YOUR wooden fences would have been good for twenty years if you had painted the buried parts of the posts with a good wood preservative. Why not do it now? Get some of Barrett's Grade One Creosote Oil. Tests have shown that it is the best wood preservative on the market because it penetrates deeper and lasts longer than any other. You can't beat creosote for insuring the life of the wood. Barrett's is the best creosote.

EVERLASTIC ROOFING

"IF YOU are not satisfied with your roofs, or want a covering that will keep wind and water out permanently, at low cost, you should try Everlastic Roofing. There is no better 'Rubber Roofing' on the market. It is inexpensive, easy to lay and gives excellent service for years. Just the thing for outbuildings. Made in one, two and three ply weights. The rolls are 36 inches wide. You need some Everlastic Roofing.

"THEN there is a product you ought to have just on general principles. As an aid in quick repairs, Barrett's Elastigum Waterproof Cement is a wonder. And it repairs permanently too. Just the thing to join and reline gutters, whether wood or metal. It seals leaks and joints and is unbeatable for flashings around chimneys."

Send for illustrated booklet describing Barrett Money Savers in detail. Address nearest office.
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TAKE THE HORNS OFF CALVES WHEN YOUNG

There are two periods in the life of a bovine when the horns may be removed—when very young, and after reaching maturity. The method of procedure will vary greatly with the age of the animal. After a careful study of methods, results, etc., I think all will agree that, everything considered, the best time to operate is when the animal is young. At this time

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FREE SPORTSMENS CATALOG OF GUNS TRAPS, NETS, FISHING TACKLE &c.
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ALFRED STOKES,
General Secretary.

PILES CURED at HOME by NEW Absorption Method

If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers, Box P. 309 Windsor, Ont.

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very little skill is necessary, there is little constitutional disturbance and consequent loss in products and flesh, and to me more important still seems to be the fact that animals thus operated upon in the large majority of cases come out with no serious scar or deformity, and have a perfectly smooth poll closely resembling those animals born hornless.

When mature animals are dehorned it is very common to see stumps left varing in length from one-half to two inches, which are weapons almost as savage as the entire horn. In this operation considerable skill and experience are required to give uniformly good results. When performed by the inexperienced, great difficulty is encountered in properly restraining the animal, this often resulting in a hurried and incomplete operation.

Dehorning Calves

As a result of many experiments covering a wide range of time and country, it has been decided that the best dehorning agent is caustic potash fused in the pencil or stick form. Directions for dehorning calves usually state that the caustic should be applied as soon as the budding horn or button can be felt under the skin. As a rule, this can be done when the calf is but a few weeks old, and although it is claimed by some that horns may be removed from animals six months old, it is undoubtedly best to operate early.

When the proper time arrives, clip the hair over the horn from an area the size of a half dollar, wash with soap suds, and rub on the moistened caustic. To prevent the caustic from running, moisten it only slightly, and apply lard or vaselin all about the spot treated. When the scabs fall off, a careful examination should be made, and if the horn is still prominent make another application of the caustic. To protect the fingers, wrap the caustic well with paper. If active caustic is thoroughly applied over a sufficiently large area, the horn will unfailingly be killed by one application.

By all means, dehorn your calves, thus saving time and perhaps avoiding serious personal injury.—Dr. E. H. Lehnert.

"TRIMMING" SHOW SHEEP

Mr. C. Elgar, in a communication which we quote from the "Kentish Express," calls attention to one aspect of the show question which is worthy of note. No one can have failed to notice the extraordinary levelness of the sheep at our leading exhibitions, and the eveness of the fleece, but it is not every one who realizes that these desirable features are often, if not always, the result of trimming or "barbering." Like the coloring, which is a practice that dies hard, if indeed it can be said to have begun the process of decay, it has the effect of disguising the sheep, making it unlike what it really is in a state of nature, and so far is deceiving. It is obviously difficult to draw a line and to say that the preparation of an animal for show shall go so far and no farther, nor would it be easy to judge when the line, if fixed, had been exceeded. But Mr. Elgar points out that the result is the concealing of defects, which nevertheless are reproduced in the offspring, to the disappointment of the purchaser and to the detriment of the breed, if only so far as the export trade is concerned. No amount of barbering or trimming will make the ram other than it is, and so far as it is possible treatment which aims at deceiving should be discouraged. The task in front of the societies if they desire seriously to tackle the problem is not a simple one, but much might be done if they looked at it from the standpoint of the good of the breed rather than from that of the interest of the exhibitor. It may be contended that the expert judge may safely be trusted to detect faults, however skilful the show preparation, but in view of the arduous nature of the work of adjudication when the classes are large, it would be a great concession to admit this. And even then, as Mr. Elgar shows in the following paragraph, the purchasers may still be deceived:

Trimming the Fleece

"Now I come to what is a well-known world trouble where sheep compete in sale yards or show rings: that is, the trimming of the fleece, and the dates of shearing. There is little to be said about it, except that the effect is thoroughly bad where sheep are being judged for their value as wool producers. However keen an eye a judge or buyer may have, it is difficult sometimes to detect it, or to know how much it has been resorted to. Instead of breeding out defects, reliance is placed on the skilful use of shears. It is hardly worth pointing out that it is a bad policy, for the sheep will show all its defects the next year, and the buyer is disappointed in his purchase, and it may mean—and certainly has taken place amongst oversea buyers—that they have not come again. How to deal with this trouble should be one of the objects of the Sheep Breeders' Associations."

HOG PASTURES

Pigs make the cheapest gains on pasture. Trials at the North Dakota Experiment Station indicate that brood sows running on good pasture and nursing litters will do as well as when receiving one to one and a half pounds of grain per each 100 pounds live weight of sow, as sows in dry lot receiving two and a half pounds grain per day each 100 pounds light weight. The pasture just about cuts the feed cost in two. The pasture alone does not furnish enough feed for either the brood sow with litter or for the weaned pigs. They should be fed some grain, so as to make a rapid growth. In this way the spring pig can be ready for market before real cold weather sets in.

Alfalfa, clover, bromus, and winter rye make the earliest pastures. When these have not been provided, early spring seeding of such grains as oats and barley or rape are the next best thing.

Auto Tongue Truck on Deering and McCormick Binders
SELF-STEERING FEATURE

The binder is purposely thrown out of square in this illustration in order to show clearly the steering action of the tongue truck wheels.

When the outer end of a binder platform starts to hang back, it pulls the tongue truck toward the grain.

Any movement of this tongue truck toward the grain turns the truck wheels in the opposite direction and at so great an angle that they automatically steer the binder back to its proper square cutting position, with the horses moving steadily straight ahead.

The truck wheels turn faster than the tongue as shown by the dotted lines.

A Gain Worth Making

WITH the **new auto tongue truck, Deering** and **McCormick** 8-foot binders cut a full 8-foot swath. That means a quicker, easier harvest—a saving of time when time is worth money. The driver's work is easier, too; on the straight-away because the horses are not crowded into the standing grain; and at the corners because the binder turns a natural square corner.

The wheels of this **new auto tongue truck** are fitted with removable dust proof bushings equipped with hard oil cups. This construction does away with the expense of buying a new wheel every time a bearing wears out.

The **new auto tongue truck** is only one of the important improvements on these binders. For instance, compare the wide, strong, deep-lugged steel main wheels with those on other machines; and compare also the arrangement for keeping canvases running true, which make them last so much longer.

Decidedly these are the binders to buy. See the I H C local agent or write the nearest branch house for full information about their good features

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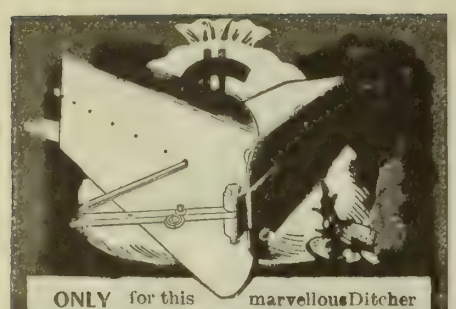
To the thousands of people who are tossing on sleepless beds night after night, and to whose eyes sleep will not come, Milburn's Heart and Nerve Pills offer the blessing of sound, refreshing slumber, because they restore the equilibrium of the deranged nerve centres, thus restoring strength and vitality to the whole system.

Mr. Arthur McCutcheon, Mt. Pisgah, N.B., writes: "I have been much troubled with my nerves, and could not sleep for hours after I would go to bed. I would toss and turn from one side to the other before I could go to sleep. I would then wake up in the night and lie awake a long time before I would get to sleep again. I thought I would try Milburn's Heart and Nerve Pills, as they were recommended so highly. I now go to sleep without any trouble; my nerves seem quieted, and when I lie down I go to sleep quickly. Anyone who is bothered with their nerves should keep a box on hand."

Milburn's Heart and Nerve Pills are 50 cents per box, 3 boxes for $1.25; at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.



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THE HORSE

THE HORSE INDUSTRY

The Canadian horse industry is now entering upon a new era in its history. However, before taking up the existing situation, it would appear advisable to go back a couple of decades and review conditions that obtained during the closing years of the last century, and up to the outbreak of the war.

The periods of so-called good and hard times seem to occur in cycles of years. The cause is the condition of the money market and its consequent effect upon all kinds of business. No industry is so quickly affected by a depression as that of the horse breeder, and in probably no country does this statement apply with greater force than in Canada. Being a young country, large sums of money are needed to develop the latent resources of our farms, forests, mines, and other industries. To this end it has been necessary to engage extensively in the building of railroad systems and other public works. However, when conditions changed in the money market and the banks refused to loan as previously, a reaction necessarily followed. Manufacturers curtailed operations, while all great works ceased except those really necessary. A study of the horse census of Canada gives a fair idea of these fluctuations in the money market, or cycles of good and hard times.

The Period from 1891 to 1901

During this decade the horse population of Canada increased, in round numbers, 100,000, as against over 400,000 for the previous ten years. Toward the close of the period light horses became a drug on the market, while the demand for draughters was limited, and the price very low. The result was that in many sections of the country breeders became careless. They ceased patronizing pure-bred sires, because of the service fee. In other sections they almost ceased breeding heavy horses for the time being. Others started raising light horses. As it was impossible to get rid of anything but the best, the practice of breeding mares that were old, unsound and of poor conformation became prevalent. This, coupled with the use of scrub sires in many parts of Canada, produced a retrograde movement. Fortunately for the country, however, many of the good districts continued to improve their horses, and when conditions changed supplied much of the breeding stock with which to start anew.

The outbreak of the South African War in 1899 had a beneficial effect upon horse breeding. While it lasted many thousands of horses were taken out of the country, and for the country's good. The exportation of the surplus, the brightening of conditions in the money market, and the rush of immigration had a far-reaching effect People began breeding horses again.

The Period from 1901 to 1913

Between 1901 and 1911 the horse population increased a little over 1,000,000, or almost ten times as many as during the previous ten years. During the next three years the increase amounted to over 250,000, a considerable falling off taking place during the years 1913 and 1914.

The Cause

From 1901 to 1912 the country developed beyond the most sanguine expectations of the people, and the price of horses rose to the highest point in the history of the country. The demand for horses made it possible for breeders to get rid of almost anything that might be given that name. Good animals, whether light or heavy, brought good prices. Comparatively speaking, the poorer animals brought higher prices than the better class, and often very much more than they were worth.

The Light Horse Period

From 1903 to 1908 the light horse came into his own. The good and the bad were in demand at fair prices, while the choice animals were eagerly sought after, and readily picked up at unheard-of figures. The amassing of wealth by many of our citizens, the desire to obtain publicity and to achieve fame in the show ring, and the scarcity of show-ring winners, together with the advent of the automobile, were factors that, in the end, proved the undoing of the light horse. During this period some of the best of our light sires were taken out of the breeding studs and gelded in order to make show-ring winners of them. Wealthy men, after having achieved the successes which they had set their hearts upon, and, having no further interest in the horse industry, quickly disposed of their large stables and dropped out. Others, unable to secure the class of horse they desired, turned to the automobile. It might further be explained that automobiles cost much less than it would to establish a first-class stable of horses and properly equip it, particularly for city use. The stringest laws and restrictions imposed by city health departments against the building of stables or the keeping of horses within certain areas, also had a detrimental effect. Thus the demand for, and the number of light horses—by which is meant particularly the carriage horse or high-stepper—also, but in a lesser degree, the saddler and hunter—has slowly but steadily lessened year by year, and it would appear that their day for city use has largely passed. Before they could again take their former place it would take years of breeding to get a sufficient number, and years to train and fit an entirely new set of grooms and coachmen. Nevertheless, a number of people will continue to use these horses, and there will always be a limited market for choice animals at fair prices. However, as experienced breeders well know, but a small percentage come up to the standard. The everyday farmer should leave this field to the expert.

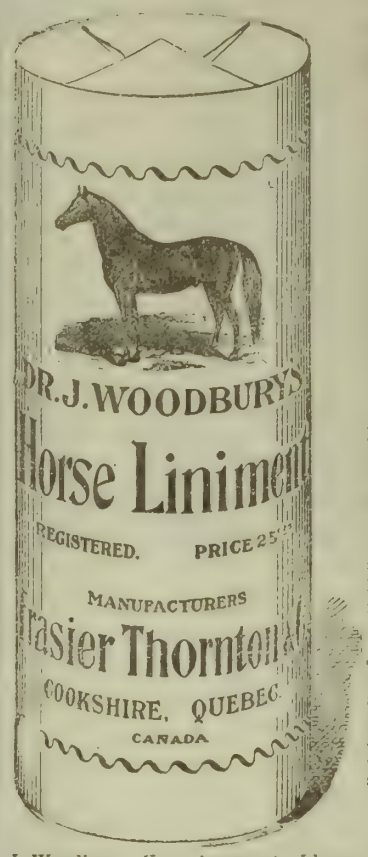
The Heavy Horse Period

The demand for heavy horses grew with the increase in population and the consequent development of the country. The high-water mark was reached in the years 1911 and 1912. Up to this time draught horses of any kind found a ready sale at good paying prices, while the good big ones were eagerly sought for and quickly picked up at figures heretofore undreamed of. In the opinion of many, the middle class and poorer draughters brought a price much beyond their intrinsic value, but this was largely through the supply not being nearly equal to the demand, and also to the fact that often the source of supply was far removed from the centres of demand.

During these years heavy horse breeding took a decidedly onward and upward trend. The free circulation of money made it possible for the people to buy and use a better class of sire than heretofore. Consequently the importers were not only enabled but compelled to bring a rather better class to the country. In certain sections the improvement that took place was truly wonderful. Unfortunately, however, this applies only to certain sections

Dr. J. Woodbury's Horse Liniment

THE INFALLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.
Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

Truro, N, S.
This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
Newton Lee, Owner "All Right" 5817.

Elmsdale, N. S.
Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

FRASIER THORNTON, &, CO., Limited, Manufacturers: Cookshire, Quebec, Canada.

Seized With Paralysis Could Not Walk

Most Extraordinary Cure Effected by the Use of Dr. Chase's Nerve Food.

To have the nervous system paralyzed, to be unable to walk and scarcely able to talk, and then to be completely cured, is not a usual experience, but Mr. Hyatt tells in this letter what he passed through. Doctors told him his case was hopeless, and when they gave up he turned to Dr. Chase's Nerve Food and obtained complete cure.

Mr. Avery Hyatt, blacksmith, St. Anns, Lincoln Co., Ont., writes:—"I am a blacksmith by trade, and ten years ago became afflicted with paralysis. I could not walk or read or write, and could talk with difficulty, so that it was a hard matter to understand anything I would say. Being only a young man, I was nearly discouraged. Two doctors told me it was brought on by overwork, and that my case was hopeless.

"One day my father read about Dr. Chase's Nerve Food, and advised me to try it. I bought 12 boxes, and when the fifth was used I saw that I was getting better. By the time the 12 boxes were used I was cured. I am well and strong and working every day, thanks to Dr. Chase's Nerve Food."

This statement is certified to by Mr. Elmon J. Hodgkins, J.P.

No ailment is more dreaded than paralysis. And yet how few people realize that paralysis of the nerves is only the natural result of neglected nervous troubles.

At first you do not sleep well, have nervous headaches or indigestion, find yourself easily irritated and annoyed, can hear noises which in good health you would never notice. You do not consider yourself sick, and yet you lack the usual energy and vigor and feel out of sorts.

Restore the nerves by using Dr. Chase's Nerve Food. 50c a box, 6 for $2.50. All dealers, or Edmanson, Bates & Co., Limited, Toronto.

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle **Caustic Balsam** did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

SUMMER SHOES FOR MEN WHO WORK

Here is something new in footwear specially suitable for farmers, woodsmen, millmen, trackmen, laborers—all those needing strong yet light, cool, easy shoes. These are made on good-fitting right and left lasts from our famous oil-tanned Skowhegan waterproof leather with waterproofed sole leather outsoles and solid insoles.

Palmer's "Moose Head Brand" "SUMMER PACKS" and "HARVEST SHOES"

are light weight, comfortable, durable working shoes for spring, summer and fall wear. Sold by leading dealers everywhere. If your merchant does not carry them write us, giving his name and address, and we will see that they are placed within your reach. Made 4, 6 and 9 inches high. 19

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Fredericton, N. B. - - Canada

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TRADE MARK REG. U.S. PAT. OFF.

Will reduce **Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises.** Stops the **lameness** and **pain** from a **Splint, Side Bone** or **Bone Spavin.** No blister, no hair gone. Horse can be used. $2 a bottle delivered. Describe your case for special instructions and **Book 2 K Free.**

ABSORBINE, JR., the antiseptic liniment for mankind. Reduces **Strained, Torn Ligaments, Enlarged Glands, Veins or Muscles, Heals Cuts, Sores, Ulcers. Allays pain.** Price $1.00 a bottle at dealers or delivered. Book "Evidence" free

W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada.

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Pays for Itself in 7 Days

Mixing concrete with this latest model Hand Mixer saves you time, labor and money.

You get a better mix with less cement

Write for catalogues.

WETTLAUFER BROS.,

Improved Concrete Machinery.

188 Barrington Street, - HALIFAX, N. S

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of our country. It was not uncommon to find that, while one district improved the conformation, quality, and size of its horses very materially, others adjoining went on using inferior sires and poor mares, just as they had done in previous decades. Nevertheless, there is in Canada today a great deal of high-class foundation stock, both imported and home bred, which if properly handled will prove of inestimable value to the country.

Conditions in Canada

The outbreak of the war found the country with a very considerable surplus for which there was little demand. Since that date pratically the only demand had been for remounts. Up to the end of the Fiscal Year 1915-16 in the neighborhood of 50,000 horses had been purchased. Of this number the British War Office took close to 14,000 head, the Canadian Department of Militia approximately 26,000, while the contractors for the French Government took over 7,000 horses. The French contractors who are now buying in the country have still large contracts, and are willing to buy every suitable horse that Canada has to offer. One firm writes saying that their contracts call for 10,000 a month while war lasts.

The prices paid for war horses may seem to be low after the exceedingly high prices that prevailed for a number of years. It should be remembered, however, that the class of horse taken is one that, generally speaking, the country can well afford to do without, and, further, that, all things considered, the average price paid is an exceedingly good one for the average class of horse taken.

Allied Countries

At the outbreak of the war practically all suitable horses were commandeered by the British and French for army service. It is true that they saved their best stallions, but, generally speaking, they were forced to send forward large numbers of their good breeding mares. It will be necessary, therefore, at the close of the war for those countries to import horses until they can re-establish breeding operations.

The horse industry of Belgium has been practically wiped out. A few of their good breeding animals were driven into France, but the Germans seized all the good horses and sold them by auction in Germany. This means that when peace is restored the horse industry in that country will have to be completely re-organized.

Future Demand

The good crop of the past year has enabled the Canadian farmers to go out and buy a part of the horse power so badly needed, and accordingly a good number of horses have gone into needy districts, with more to follow. Carload lots are being shipped quite commonly. Already the number of horses from east to west far exceeds the total number shipped during 1915. The increase in immigration, which is expected to follow the war and must of necessity go to the land, will create a still further market.

What to Breed

The only safe advice that can be given to the farmer is to start now to breed good draught horses, sound, of good conformation, and as large as possible. These will undoubtedly be wanted in numbers both at home and abroad.

The only light horse that bids fair to be wanted is the good big roadster; a square trotter of good conformation and sound, weighing from 1050 pounds upwards. However, the demand for this class of horse will not in any way compare with the demand for draughters. Nevertheless, there should be a steady market for good animals such as has been described.

Commercial Breeding

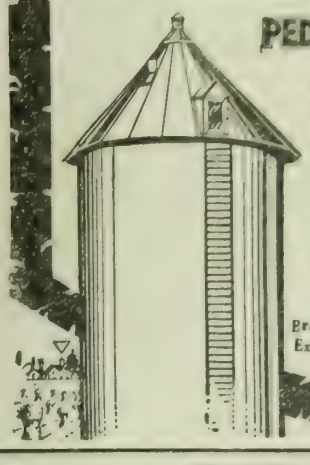
During the past the attention of the

(Continued on page 616)

Make Your Silos Last Years Longer

IT'S the roof of your Silo that really bears the strain of wear. It's the roof that must protect its inside walls from the decay and rot of dampness and the warp of sun and air.

PEDLAR'S "PERFECT" SHEET METAL SILO COVERS



add years to the life of your Silo by giving you a roof whose sections lock together air-tight and rain-tight. Helps keep frost from cracking concrete walls. Just enough ventilation from the rain-proof ventilator. Supplied in either hip or single pitch at once. Sections easily put together and erected in a few hours. Defy decay by Pedlarizing now with a Pedlar Silo cover. Send for free Booklet M F

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(Established 1861)
26 Nazareth St., Montreal, Que.
Branches: Ottawa, Toronto, London, Winnipeg
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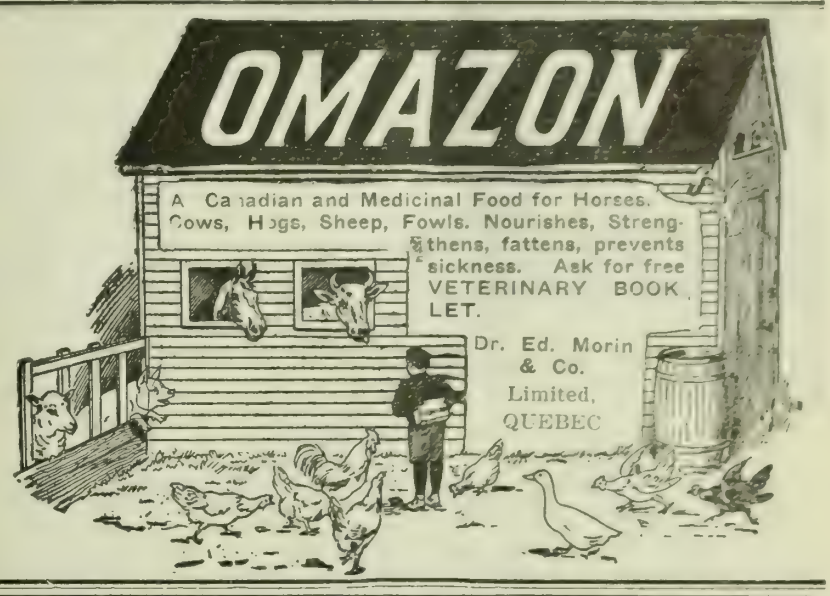

A Canadian and Medicinal Food for Horses, Cows, Hogs, Sheep, Fowls. Nourishes, Strengthens, fattens, prevents sickness. Ask for free VETERINARY BOOKLET.

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WILSON'S ARE GOOD SCALES

$5.00 only

Will bring this Scale FREE to your Station

Easy Terms to Pay Balance

The WILSON SCALE 2000 pounds heavy wheels, drop lever and 16 Diamond Steel Bearings that are guaranteed for 20 years against wear or breakage.

2000 POUNDS OUR LEADER

C. WILSON & SON,
41 Esplanade St., E.
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ESTABLISHED 4 YEARS

Farmers and Wool Growers ATTENTION!

We are open to buy any quantity of Washed and Unwashed Wool, paying the highest Market Cash Prices.

We pay freights to Humphrey's Station on all lots of 100 pounds or over.

On application we will be pleased to furnish current rates.

J. A. HUMPHREY & SON, Limited,
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PEERLESS
Farm Gates
THERE is no guess work in the manufacture of Peerless gates. The points of greatest strain are scientifically calculated and then we design braces, stronger than actually necessary, to make our gates stiff and rigid—they simply
Can't Sag or Twist
They embody only the best materials. Frame-work of 1⅜ inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with No. 9 Open Hearth galvanized steel wire—built for strength and durability weather proof and stock proof.
Send for free catalog. Ask about our farm and poultry fencing, also our ornamental fence and gates. Agents nearly everywhere. Agents wanted in open territory.
The Banwell-Hoxie Wire Fence Co., Ltd.
Winnipeg, Man.
Hamilton, Ont.

POULTRY

POULTRY

To any one who has not carefully followed the direction of the poultry development in Canada an understanding of the status which the poultry industry has now reached must constitute a distinct surprise. Whether viewed from the standpoint of the farmer or of the produce trade, it is now one of the best organized and most progressive of any of our live stock industries. Co-operation among farmers in marketing is improving the product and realizing for them a higher price than they have hitherto been able to obtain. The reorganization of methods by the trade is providing against loss in handling, is assuring to the consumer a better article, and establishing our export business upon a firm basis.

It is estimated that Canada and Cuba during the last twenty years received from the United States about three-fourths of all the eggs exported by that country during that period. This situation, however, has now changed. As against an importation in 1913 of 13,240,000 dozen, we imported in 1915 not more than 3,783,952 dozen. On the other hand, while in 1913 we exported only 147,149 dozen, in 1915 we exported 7,898,332 dozen. This constitutes a net increase in production, in two years, of at least 17,1000,000 dozen. Practically all of these exports went to the United Kingdom.

Notwithstanding the surplus in Canada which these figures indicate, prices during March, April, and May have remained at an extraordinarily high level. For the first quarter of the year 1916 the price to producers, selling co-operatively, has been at least 4c in advance of the price received for the same period in 1915. For the month of March it was at least 5c in advance, and for the month of April at least 3c in advance of last year's price for these respective months. The demand for eggs for local consumption, for storage purposes, and for immediate export, has rarely been so keen as at the present moment. This situation is clearly reflected in the prices just quoted. Heavy domestic consumption in the face of the high price for meats partly explains this condition. Confidence in the export demand, on the part of the produce trade, confirms it from another direction. Notwithstanding increased production, the egg and poultry business in Canada is in a very strong position at the present time.

Under these circumstances, we believe that it will be a very wise practice to raise as many chickens as it is possible or practicable to handle. Early hatched chicks make good winter layers. Rough grains will probably be produced in abundance in Canada this year, and the feeding of poultry at a profit should be materially assisted from this source. Eggs at winter prices are a paying proposition, in any event. Poultry, alive or dressed, under present and prospective market conditions, can unquestionably be reared and finished at a decided profit. A good flock of poultry, if carefully handled, will serve to prevent waste on the farm and promote economy in living expenses, such as is particularly necessary when all farm products are becoming so marketable and so dear.

RANGE OR CONFINEMENT

When fowls have free range they are healthier, lay a greater number of eggs, and return more profit than when confined to small yards. The Ohio station has made a comprehensive test in order to compare the egg production of hens kept in yards or allowed free access. The first experiment with 202 White Leghorns lasted from May 5, 1912, to October 3, 1914, a period of 882 days. The results are shown in the table under Lot 1. The value of free range was shown to be 62 cents per hen.

The second experiment started November 30, 1913, and closed November 27, 1915, a period of 728 days. There were 114 White Leghorns in this experiment, which was practically the same as the first. The egg production of the hens, especially that of the lot on range, was unusually high.

Twenty of the 53 hens in the range lot that were living at the close of the year, as well as one that died, produced 200 eggs or more in 365 days from the time they started laying. Fourteen of the 50 hens living at the close of the second year, and one that died, produced more than 350 eggs each in two years, their average being 291 eggs.

The value of the range per hen was $1.29 for the two years, which would figure out at an annual rental of more than $26 per acre. The returns from this experiment are also shown in the table under Lot 2. A third experiment was begun when the second one closed and the first year's returns are quite similar.

No special effort was made to secure a heavy egg production. The hens were fed twice a day on a grain mixture composed of three parts by weight of cracked corn and one part of wheat. They were given access to a mash mixture composed of four parts ground corn, two parts wheat bran, two parts meat scrap containing 50 per cent of protein, and one part of linseed oil-meal. The fowls also had access to oyster shells and grit.

Summary of Results

	Range		Confined	
	Lot 1.	Lot 2.	Lot 1.	Lot 2.
Profit	$2.88	$4.27	$2.26	$2.88
Eggs laid ...	278	316	241	244
Value	$4.85	$6.01	$4.22	$4.57
Food cost per doz., cents..	8.49	6.59	9.75	8.31
Food cost per hen	$1.97	$1.74	$1.96	$1.69
Mortality %.	15.53	12.3	23.23	17.5

TO PREVENT MITES

One of the first things to do when the warm days come is to clean the

"I have a
Back-ache
and feel so weary"
Your Kidneys are overworked. They need the strength and tone that Dr. Cassell's Tablets can give
Restoratives—not Drugs
Backache is evidence that your kidneys are weak, that there is not sufficient vital force to keep them properly active. Drugs in such a case can only irritate. It is strength that is wanted, and that strength must come from the living battery of vitality we call the nervous system.
That is why Dr. Cassell's Tablets are so unfailingly effective in the cure of backache and other results of kidney weakness. They nourish the nerves and nerve centres, replenish the vital reserves, and so restore health to the kidneys by supplying that vital force upon which the activity of the kidneys and of every other bodily organ depends.
Dr. CHAS. FORSHAW, F.C.S., D.Sc., etc., a well-known English scientist says:—"I have tested Dr. Cassell's Tablets and can conscientiously recommend them as an eminently safe and effective remedy for nerve and bodily weakness, for anæmia, malnutrition, and many forms of stomach and kidney troubles."
Dr. Cassell's Tablets
Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-spasmodic, and are the recognised remedy for
NERVOUSNESS
NERVOUS BREAKDOWN.
NEURASTHENIA
SLEEPLESSNESS
ANÆMIA
MALNUTRITION
DYSPEPSIA
PALPITATION
KIDNEY TROUBLE
Specially valuable to Nursing Mothers and Women of Middle Life.
Sold by Druggists and Storekeepers throughout Canada. Prices: One tube 50 cents; six tubes for the price of five. War tax 2 cents per tube extra.
Free Sample
On receipt of 5 cents to cover mailing and packing, a generous free sample will be sent at once. Address: Harold F. Ritchie & Co., Ltd., 10, McCaul-street, Toronto.
Sole Proprietors: Dr. Cassell's Co. Ltd., Manchester, Eng.

The Provincial Chemical Fertilizer Co., Ltd.,

ST. JOHN, N. B.

announce that in addition to their regular Brands of Fertilizer, so well and favorably known throughout the Provinces, they are prepared to furnish

Pulverized Lime Stone

and Land Plaster

on very favorable terms, in either bulk or bags and solicit inquiries.

POULTRY SUPPLIES.

Your Child May Have Worms

Keep a watchful eye on your child's health. Above all guard against worms. Familiar symptoms of worms in children are: Deranged stomach, furred tongue, belching, variable appetite, increased thirst, acid or heavy breath, nausea, enlarged abdomen, costiveness, pale face of leaden tint, bluish rings around eyes, itching of nostrils, languor, irritability disturbed sleep, grinding of teeth, irregularity of pulse.

Trade Mark

Grown folks are subject to worms also.

The one best remedy is Dr. True's Elixir, the Family Laxative and Worm Expeller. First sold in 1851—today it has a world-wide reputation. Good for adults also. Get a bottle today—at your dealer's; 35c. 50c and $1.00. Advice free. Special treatment for tapeworms. Send for book.

Knowlton, Que. Dr. True

poultry house thoroughly, especially if there has been trouble with mites the year before. Roosts and nests should be carried outside and treated to a thorough cleaning and a coat of whitewash will always improve the interior of the house, whether mites are present or not. If the floor is of earth, it is well to remove an inch or so of the surface that has become more or less saturated with the moisture from the droppings through the winter, and replace it with fresh, clean soil. The nests should be filled with fresh nesting material, and everything made as fresh and sanitary as possible. To finish the good work, it is well to get over the flock at night and treat them for lice. If a little grease is used in the feathers below the vent and a good louse powder over the rest of the body there will not be many lice left to play havoc among the early broods of chickens.

KEEPING THE PREMISES CLEAN

Probably no subject in poultry lore has been treated in the press so much as that of cleanliness. Its importance is so great that neither too much can be said of it nor can it be too rigidly enforced. The health of the flocks and the success of the farm depend largely upon the enforcement of the rule.

The houses must be kept clean. This does not refer to dust, as that cannot be avoided, inasmuch as the fowls must scratch among the litter and wallow in the dust bath to keep themselves clean. But there is no reason for allowing the cobwebs to accumulate, hanging down from the ceiling so that these tiny chains encircle one's face as he enters the pen. Neither is there any excuse for allowing the manure to accumulate on the dropping boards, or the floor of the pen allowed to become filthy.

A discarded house broom will be just the thing for keeping the place tidy. Sweep the ceilings and walls of these unsightly cobwebs, and gather up the accumulation of dirt on the floors.

REMEDIES FOR BOWEL TROUBLE

Slight bowel disorders of young chicks can often be remedied by the use for a few days of a teaspoonful of lime water in each quart of drinking water. The use of boiled whole milk in place of water as a drink for the chicks has also been found effective in light cases. Paregoric is a very effective remedy. It should be placed in the milk or water at the rate of two to four drops to a quart, allowing the chicks no other drink for a few days.

These remedies will not be effective unless the cause of the trouble is corrected. The chicks that are most affected should be killed and buried, the house thoroughly cleaned and sprayed frequently with a good coal-tar disinfectant. After a flock is removed from the brooder house it is a good plan to mop up the floors with a strong creolin solution and then heat the house so the whole interior will become steamed with the disinfectant.

These precautionary measures, coupled with frequent cleaning of the house and careful feeding, will often overcome the trouble without recourse to drugs.

CARE OF YOUNG STOCK

Crushed oyster shell is the best material for shell making.

Duck eggs should be marketed frequently, as they depreciate in quality more rapidly than hens' eggs, especially during hot weather.

A promising bunch of growing chicks can be spoiled by one night's sweating. Allowing 100 or more to crowd together in a small coop is sure to be the ruination of some of them. If you would raise the finest fowls, do not allow more than 50 youngsters together at night.

With the arrival of warm weather the army of mites is fast recruited. Get ahead of them by soaking the roosts, drop boards, and floor with crude petroleum. A little goes a long way in disinfecting the premises and destroying lice and mites.

The feeding of milk to young chicks has a most favorable influence on the growth and on lessening the mortality. It tends to prevent mortality from all causes, and if fed soon enough and for a sufficiently long period greatly reduces the death rate caused by bacillary white diarrhea.

When the young turkeys are large and strong enough to jump over the sides of the pen, I let them run with the hen, gathering them in when a rainstorm threatens. As they are very susceptible to dampness, it is best not to let them out in the morning until the dew is off the grass.

Scrub hens are just scrubs, and even under the best of management will show little profit. In the Connecticut laying contest a pen of 10 scrubs laid so few eggs that the food consumed between November 1 and March 1 made them cost 7 cents each. Any old thing will lay in March, April, and May, when eggs are cheap.

THE CACKLE OF A HEN

Listen for the cackle of your hen. It has a money value to you.

When the winter season approaches, when the price of eggs will advance and the cackle will become of even greater significance to you.

Plan for the cackle, feed the hens in accordance with the demands of nature as propounded by the experts who have spent their life in the work.

If the cackle is not heard with sufficient frequency, ask yourself why. Dig down and study the subject, for the more you study the oftener the hen will cackle, and cackling means more eggs and a bigger bank account.

It is the law of nature that a hen should lay, and cackle. She should lay often and do much cackling, for that too is nature's law.

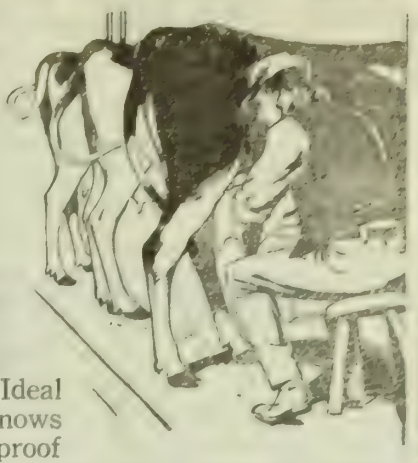
But she will not lay unless she receives proper food and care, and therein lies the wisdom of the man who thinks before he acts.

Get hold of some good literature, read up on the subject of egg production, apply the knowledge you thus obtain, and in the end you will learn to experience a keen delight in every cackle of your hens.

Your hen wants to cackle—she will cackle if you give her a chance.

And there's money in the cackle of a hen.

You get the proof at milking time



Silage fed cows produce about 25 per cent more milk than those on dry feed. Ask any farmer who has an Ideal Green Feed Silo what he knows about it. He gets positive proof of the superior feeding value of good silage at every milking. Yet silage costs no more than other feed. In fact, it costs 15 to 20 per cent less. But remember this: the feeding value of silage is determined to a very great extent by the silo. Good silage can only be produced in a good silo.

IDEAL GREEN FEED SILOS

have proved their right to the confidence they enjoy among thousands of Canadian users by the service they have given for many years. At every milking time, the man who has an Ideal gets unquestionable proof of the wisdom of his silo choice.

A "cheap" silo or a silo erected from "cheap" material will prove the most costly you can buy. The few dollars you might save on the first cost by buying such a silo will be lost many times over in the poor quality of the silage, the trouble and expense you will be put to in keeping the silo in repair and in its short life.

An Ideal will pay for itself in one year and last many years. It will preserve the silage perfectly. It will return the biggest profit on the money you invest in it.

Get all the facts that prove that the Ideal gives you more for your money than any other. It costs nothing to get this information and doing so will be the means of insuring silo satisfaction for you and will save you many dollars. Write today for catalogues and complete information.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

BREAKING UP BROODY HENS

A hen is one of the most jealous creatures, and if placed in a wire-sided coop where she can see the rest of the flock ranging about the yard she is very restless, especially if there is a male with the flock frequently calling his mates to partake of a choice morsel of food, and if plenty of food and water are supplied she eats often, thereby keeping her body built up so she goes to laying again in a short time.

The plan followed here at the experiment station is to place the hen in this kind of coop on the day after she remains on the nest and does not lay; she is kept in the coop four days, and then released. During the time she is left in the coop she is given all the feed and water she wants. About 4000 hens are treated in this way each summer at this place. The records show that hens broken in this way begin laying again as follows:

The time from the laying the last egg till the hen began laying again was 10 days in March, 8 days in April, 10 days in May, and 12 days in June. There were more broody hens in June than in April, but for practical purposes we might say the average is 10 days. These coops can be easily built by any one out of scrap lumber and a little wire.—T. E. Quisenberry, Missouri.

EGGS IN WATER GLASS

The best method of preserving eggs for home use, or for sale in a limited way, is to pack them in water-tight vessels and cover them with a solution of water glass. Cover the vessel and keep it in a cool, dark place to prevent evaporation. Only fresh eggs and those with clean, sound shells can be preserved. Those with dirty shells, even when carefully washed, will not keep well. A few dirty eggs in the vessel may spoil the entire lot.

Stone crocks holding not over 10 gallons make the best vessels. The eggs should be put in daily as gathered, but one can hold them for several days. Many village and city housekeepers buy a crate or two of eggs in the spring when they are the cheapest and preserve them in water glass. Estimate three dozen eggs to each gallon capacity of the vessel. The liquid water glass, or silicate of soda, which can be purchased at most drug stores for 15 to 30 cents per quart, is used for this purpose, one quart with 10 quarts of pure water. Rain water or boiled water is preferred.

Old hens are the cause of low averages in egg production. The pullets work regularly, a Chicago farm paper says, but the old hens lay about a dozen eggs and rest the remainder of the year.

Unless you are raising a particular stock of chickens of which you have only a few hens, you cannot afford to keep the old hens as layers. A hen is not profitable after her third summer as a layer. Selling the old hens and using the incubator for hatching is the best plan for the small poultryman.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

"Selfish" Uncle Joe

Uncle Joe was busily engaged uprooting weeds in his well-kept garden one beautiful morning in the latter part of the month of May. The merry birds were singing and flitting among the fragrant apple blossoms, the starry dandelions gleamed brightly through the dark green grass, and all nature seemed harmonious and smiling in the light of the morning sun.

But notwithstanding all this freshness and beauty of scenery, the countenance of Uncle Joe showed unmistakable signs of disquiet. The Rev. Hatfield, who was taking his usual morning stroll, espied Uncle Joe at work in his little garden, and crossed over to have a few words with him. The following conversation took place:

"Good morning, Uncle Joe. How are you this beautiful morning?"

"I'm mighty bad this mornin', Parson. 'There's no peace for the wicked,' the Good Book says, and I believe it for sartin."

"Why, what new trouble have you got into, Uncle Joe? You are looking well, and your premises are as clean as a new pin."

"Things that's clean on the outside, Parson, ain't allers so clean on the inside, you said las' Sunday. Oh, that sermon hit me monstrous hard, Parson. Did you mean it a purpose for me? 'Cause I ain't wuth it."

"No, no, Uncle Joe, I never thought of you. But tell me what's the matter this morning in particular."

"Nothin', Parson, more'n common. I was jest wonderin', when you come along, how wicked a pusson'd have to be for Catan to claim him. I've heard say that when a body got as bad as he could be the Old One would come for him. What makes you laff, Parson? 'Tain't no laffin' matter with me, I tell ye."

"Oh, Uncle Joe, poor Uncle Joe! I consider you one of my very best parishioners, and I can but smile to see you so depreciate yourself. What is the matter with you?"

"Oh, I've done so many awful things, Parson."

"You haven't killed anybody, have you, Uncle Joe?"

"Not yet."

"Nor stole anything?"

"Law, no."

"Nor told any lies?"

"I've 'quivocated, 'n' that's jest as bad, you say."

"Well, suppose you don't do that any more. Then how do you stand?"

"Oh, Parson, I've done some awful mean things. T'other day, when we had eels for dinner, I cleaned out the most of them, though I knowed all the time t'others liked them as well as I did. Then again, comin' home from the store las' night, I had two bananas for Betsy (that's my ole woman), an' I jest thought I'd eat one; and it tasted so good, and I was so hungry, that I bolted both of 'em 'fore I thought."

"Well, Uncle Joe, how about that sick man you took care of every night last week, and worked every day just the same?"

"Oh, that was only ole Rastus. He ain't got nobody to see after him, so I had to. 'Twa'n't no credit to me."

"Who went without his dinner of soup, sweet corn, and potatoes, and carried it to poor Widow Clark?"

"I did, for I knowed she was starvin', and I couldn't 'a' slept a wink if I hadn't, so ye see that was nothin' but selfishness."

"Pity there were not a few more selfish ones, then, I think, Uncle Joe."

"Oh, there's plenty, I suppose, jest like me, Parson, maybe worse, but they must sihn for theirselves, same's I do."

"I heard you walked six miles, Uncle Joe, to let Jim Smithers know he was going to be warned out of his house because he couldn't pay his rent, and that you gave him a month's rent so he could stay."

"Yes. His wife was sick. 'Twould 'a' killed her to be turned out, and I should 'a' been a murderer then, sure, so that's why I had to do that, ye see. I couldn't stand that on top of everything else, Parson."

"Don't you think you did a good deed then, Uncle Joe?"

"Oh, I s'pose 'twas, for them; but I done it to get me out of the scrape, ye see. I couldn't eat nor sleep for thinkin' 'bout 'em, and knowin' I could get 'em out o' trouble, and I've got to eat my rations an' sleep by night or I can't work by day. Nothin' but selfishness, ye, see. Now, Parson, you don't really think I'm any better for doin' them things, do you?"

"Yes, Uncle Joe, I do; I think you are a right-down splendid, kind-hearted old fellow, and I respect you, and I want you to be happy."

"Heavens and earth, Parson! How is a man to be happy with so much misery on his hands all around, hey? That's what makes me want to be rich—I'd help some on 'em along, I tell ye! But what can an old, miserable, elfish, poverty-struck repperbate do?"

"I think you do a great deal of good, Uncle Joe, and for what you can't do God will take the will for the deed. He tells us so in His word."

"But, ye see, this 'will for the deed' business don't help them that's in trouble, Parson. I hear folks in prayer meetin' tell how happy they are, and I can't help thinkin' they no business to be. It sounds 'mazin' selfish, to my thinkin', this gettin' yerself all high and dry, and leavin' everybody else down in the muck. 'Pears to me it's the confoundedest kind of religion, and I ain't got it."

"No, I know that, Uncle Joe."

"Mind ye, 'tain't to my credit. I say it, Parson: I can't help it."

"Oh, I suppose not, Uncle Joe; and so, when Jack Haley broke his leg and was laid up last winter, after he had killed your dog and stolen your melons, you hauled him a load of wood, cut it, and carried it into the house for him, I hear. Seems to me that looks like loving your enemies, Uncle Joe, hey?"

"No, sir-ee, that's where the shoe pinches. I don't love that tarnal critter one bit, nor can't, but there was his poor wife an' child'en, cold and hungry, and I jest had to warm 'em up, ye see."

"And you carried Jack himself warm blankets, and things to make him comfortable, and beef brother to strengthen him, and I don't know what all."

"Oh, that was to get the poor devil well, so I shouldn't have to take care of his family—see? 'Twa'n't on account of loving him, by a long shot, I can tell ye. 'Twas jest for my own benefit."

"Well, Uncle Joe, you do beat all! According to your account, you have never done anything from a right motive in your life."

"Not that I can remember on, Parson. Ye see, everything that I ever said or done for other folks is jest to make myself feel better—that's all. If that ain't clear, sheer selfishness, what is it? I don't love my enemies—not Scripter fashion—an' I'm allers pokin' round and gettin' into trouble, on other folks' account, when I ought to be mindin' my own business."

"I guess I can mention one thing you do that is right, Uncle Joe: you are a constant attendant at church, I notice, and a good listener."

"Yes; that's to find out what else I can do for myself, Parson. But I don't understand some things I hear."

"What is one, Uncle Joe?"

"Folks says 'Be good, and you'll be happy.' I dunno's that's Scripter, but folks says that. Now, I think if I was good I should be miserabler than I be now, 'cause I should pity poor devils so much that I should have to let all my work slide and tend right to 'em."

"Oh, no, no, Uncle Joe; take my advice: read the Bible more, and do as it tells you, and I am sure you will not be so troubled. Provide for your own household first. You know, 'he that does not provide for his own house,' Scripture says, 'is worse than an infidel.'"

"That's it; I'm worse than an infidel, no doubt. Oh, I'm selfish to the core, and I don't see my way out of it at all, Parson. But I'll take your advice and read my Bible more, and perhaps I may learn somethin' yet. Thank ye, kindly, Parson; you've encouraged me up finely, and no mistake."

"All right; I'm glad to hear it. I shall know whom to call on when I am sick or in trouble, Uncle Joe."

"Sure, Parson, sure; I'll be there."

The parson went on his way, meditating on the virtues of this singular character, while Uncle Joe turned and went into the house, muttering to himself: "Must hurry up and get down to Sile Rollinses, and fix his bandages. He says I don't hurt him like the others, so I feel obliged to tend to that all the time. Oh, I forgot my breakfast—never mind—eat when I get back—any time—sick folks fust—so's to feel better myself. Selfish! Selfish!"—Laura Tripp Allen.

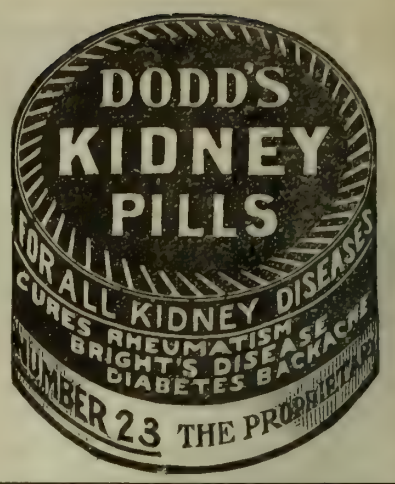
BETTER THAN SPANKING

Spanking does not cure children of bedwetting. There is a constitutional cause for this trouble. Mrs. M. Summers, Box W. 309, Windsor, Ont., will send free to any mother her successful home treatment, with full instructions. Send no money but write her to-day if your children trouble you in this way. Don't blame the child, the chances are it can't help it. This treatment also cures adults and aged people troubled with urine difficulties by day or night.

NO OTHER INVESTMENT PAYS LIKE KINDNESS

How few there are who estimate aright the power of kindly words and deeds! And yet what mortal being has not at some time or other felt their benefit and sweetness? Without their gentle influence life's cares and perplexities would harden, and its trials and sorrows would soon wither and blight the heart. Every kind word said to a dumb animal or bird makes the speaker happier. Speak kindly to a dog and caress him, and a change will come over him instantly. From a growling canine he will be transformed into a gentle, submissive dog, whose wagging tail and kindly speaking eye show that he is your friend.

A well cared for horse or cow that hears only kind words will be a great deal more willing to heed the wishes of its master than one that hears only shouts and rebukes.



Ella Wheeler Wilcox has echoed the thoughts of human hearts when she said:

Let me be kind to weaker things of earth,
And love them onward to a higher birth,
And let my patience and my cheerfulness
Life's common pathways beautify and bless.

Kind words and deeds shown to one's friends will in due time create in them the same spirit of kindness and generosity, for, "As in water face answereth face, so the heart of man to man."

Every kind act or kind word is carried onward. As a wave in the ocean creates new waves, even so will a kind deed generate more kindness in the heart to which it is shown. The secret of hapiness is to forget ourselves and learn to think of others.

There are many people whom we meet in our daily walks of life who are

PAINS IN SIDE AND BACK

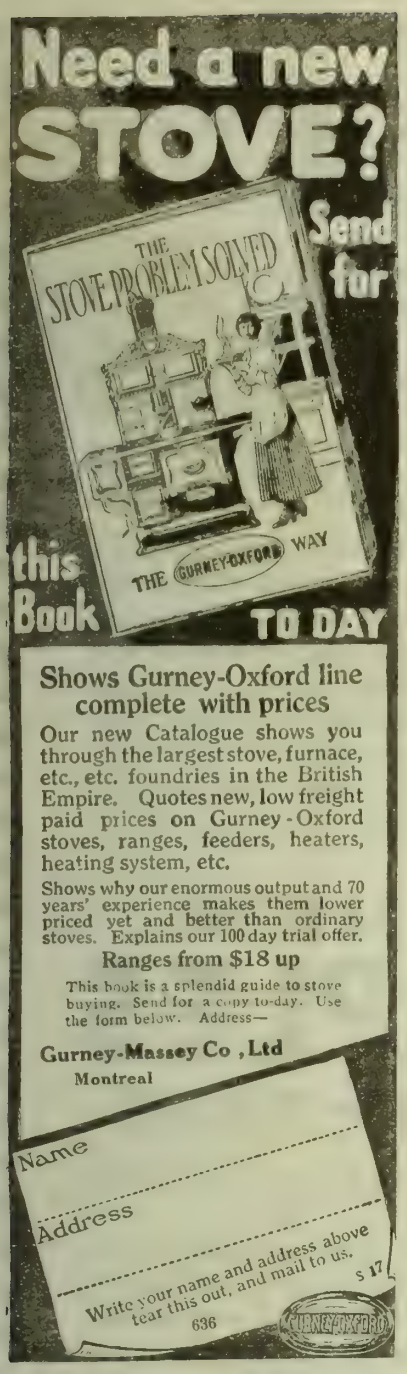
How Mrs. Kelly Suffered and How She was Cured.

Burlington, Wis.—"I was very irregular, and had pains in my side and back, but after taking Lydia E. Pinkham's Vegetable Compound Tablets and using two bottles of the Sanative Wash I am fully convinced that I am entirely cured of these troubles, and feel better all over. I know your remedies have done me worlds of good and I hope every suffering woman will give them a trial."—Mrs. ANNA KELLY, 710 Chestnut Street, Burlington, Wis.

The many convincing testimonials constantly published in the newspapers ought to be proof enough to women who suffer from those distressing ills peculiar to their sex that Lydia E. Pinkham's Vegetable Compound is the medicine they need.

This good old root and herb remedy has proved unequalled for these dreadful ills; it contains what is needed to restore woman's health and strength.

If there is any peculiarity in your case requiring special advice, write the Lydia E. Pinkham Medicine Co. (confidential), Lynn, Mass., for free advice.



Shows Gurney-Oxford line complete with prices

Our new Catalogue shows you through the largest stove, furnace, etc., etc. foundries in the British Empire. Quotes new, low freight paid prices on Gurney-Oxford stoves, ranges, feeders, heaters, heating system, etc.

Shows why our enormous output and 70 years' experience makes them lower priced yet and better than ordinary stoves. Explains our 100 day trial offer.

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This book is a splendid guide to stove buying. Send for a copy to-day. Use the form below. Address—

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The Secret of *Flaky* Pie Crust

It's in our Recipe Book—with a lot of other recipes for making good Pies.

But—we're going to tell you right here how *always* to have the top crust fine and flaky—and how to have the under crust just right, even when using fresh fruit.

Just use part

BENSON'S CORN STARCH

Instead of all wheat flour. Try it, and prove it.

Get a package of BENSON'S at your grocer's, and write to our Montreal Office for copy of our new recipe book, "Desserts and Candies" that tells how.

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MONTREAL, CARDINAL,
BRANTFORD, 218 FORT WILLIAM.

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hungry for a kind and cheering word. The old-fashioned ways of our parents and grandparents were by far the best. How many pleasant hours they brought to their neighbors by friendly chats concerning their domestic affairs, or the kindly interest manifested in the joys and sorrows of others. When one enquires about the absent son or daughter it is a comfort to the mother's lonely heart to feel that somebody else cares for that which means so much to her.

There is no investment which pays like kindness. It brings in a dividend of happiness from the very beginning because it pays compound interest in pleasant memories and true friendships. There is no better way in which to invest time and strength than in helping others.

"Now is the time! No longer wait to scatter loving smiles and words of cheer to those around whose lives are lone and sad."

SELECTING WALLPAPER FOR COUNTRY HOMES

Shades of Yellow, Cream, Tan, or Warm Gray, with Touch of Rose, Are Always Attractive

About this time of the year a good many women are thinking about selecting wallpaper for their rooms. Some have grown tired of their color scheme and desire a change, while others will paper their walls for the first time.

In either case the matter is given considerable thought, and this is wise, for people usually have to live in their rooms a long time after the walls have been decorated anew, and they have come to understand that the decoration of rooms on walls and ceiling either makes or mars the beauty of home and home life, for it is a fact that the colors in decorations do affect one's spirits and dispositions.

For instance, red excites and stimulates, and is never a restful color in our sleeping or living rooms; while of green we usually have plenty out of doors in summer, though blue-greens and sage greens may be used on some soft-toned backgrounds. Yellow is a pleasant color for rooms with a northern outlook. It gives a sunshiny atmosphere, and one cannot get gloomy in a room with walls of warm yellow, but it must be remembered that there are yellows and yellows. There is a creamy tone that is suave and gracious, and a rosy yellow that is smiling and gay and full of sunshine, and just the color for the family living room.

Then, too, one never makes a mistake in selecting a warm tan, a delicate wood shade, or the warm gray that just now is so popular when brightened up with a touch of rose. Brown, buff, cream, and tan are longtime favorites of which we do not tire, and of these there are many shades which it is well to carefully consider. These colors make a good background for pictures, and are restful and durable. It is a mistake to select cheap paper with fold decorations, as the gold blackens unpleasantly with age. Blue is a heavenly color, but not for walls, unless it is the pale blue and white used in bedrooms, and then it should be a soft blue-gray.

ATTRACTIVE ATTIRE FOR THE HOUSEWIFE

Pretty Wash Dresses of Pale Pink, Blue, or Lavender Always Look Fresh and Good

Many women adept in selecting street clothes fall short in the matter of choosing suitable garments for wear in the kitchen. They think torn, soiled shirt waists, half-worn skirts, and buttonless, down-at-the-heels boots good enough for the kitchen; or they wear the cheap, ugly frocks and aprons that are sold in numberless thousands. They look untidy, and there is no excuse.

Unless laundry work or scrubbing is to be done, there is no reason why working clothes should not be as pretty as other clothes. This does not mean as expensive, but prettier materials can be bought for the same money. If women will search the wash-goods counters they will find a bewildering array of pretty prints, ginghams, linens, crepes, batistes, and lawns, all low in price, and many suitable for house wear.

A pale pink, blue, or lavender dress is much more to be desired than an ugly dark one. Trimmed with bits of moderately priced lace, it can be made to look far removed from the tiresome wrapper or house dress of coarse material and outlandish fashion. The same with aprons. Why homely materials when there are so many light checks and figured cloths that can be made into bungalow aprons or jaunty breakfast, afternoon, or tea aprons?

Women—young women especially—should see that their house dresses and aprons are fresh and good to look at. Light-colored clothes are just as easy to launder as dark, and they have the added advantage of looking prettier after ironing. It pays to look fresh, crisp, and clean when engaged in household duties.

YOURS TO ENJOY

You'll Like the Flavor

40c, 45c, 50c per pound

PEANUT BUTTER IS A NUTRITIOUS FOOD

But is Best Used in Combination with Other Food Materials

Peanut butter is a very nutritious food. Generally speaking, it is three times as nourishing as beef, mutton, or veal, and costs usually only one-half. Because of the high food value peanut butter should be used moderately. Since it is such a concentrated food, it is apt to cause digestive disturbances unless it is used in small quantities with other foods.

Peanut butter lends itself to a great variety of dishes in the prepartion of foods. It is easy to use, and does not necessarily require cooking. On account of its high food value, peanut butter should be used in combination with other food materials. Its high fat and protein content make it desirable for a meat substitute, and it may be served in palatable dishes such as peanut butter loaf, croquettes or chops. Since one-half of peanut butter is fat or oil, it can be used as shortening in muffins, cookies, cake and bread. Its nutty flavor is pleasing in candies, frostings, cakes, and salads.

Following are a number of recipes in which peanut butter is used:

Peanut Butter Loaf—1 cup peanut butter, 1 cup hot water or milk, 2 cups bread crumbs, 1 tablespoonful salt, 2 tablespoonfuls sage. Cream the butter and liquid. Add seasoning and bread crumbs. Bake in bread tin or casserole for one-half hour. Serve with sauce. This recipe is sufficient for six or seven.

Peanut Butter Croquettes—One-half cup peanut butter, one-half cup hot water, one-half tablespoonful salt, one minced onion or 1 tablespoonful sage, 1 cup bread crumbs. Cream the butter and water. Add the seasonings and enough bread or cracker crumbs to form into cakes. Fry in deep or shallow fat. Serve with tomato sauce.

Peanut Butter Chops—One-half cup peanut butter. Cream butter and milk and add powdered sugar until mixture will spread nicely on cake. This frosting may be used to fill dates.

Note—All measures level.

CHILDREN'S PLAYGROUND

Why not make a playground for the children in some pretty nook of woodland, where there is a tiny stream of water, and tall trees to ward off the sun's heat? Clear the place of briars and undergrowth that would harbor any possible poisonous reptile, put up a few slab benches, a low seew-saw, and perhaps a safe swing or two, nail some poles around it from tree to tree, to prevent intrusion of cattle—and the thing is complete.

Children love a place like this. It is their very own. They hew and whittle to their heart's content. Kites are made without bothering about the litter, paper dolls are "cut out," scrap books are pasted, and toys are scattered in a reckless abandon, without fear of reproof from mother. Lunches are served in tiny dishes, and the crumbs are left for the chirping birds to make a supper for themselves.

Give the youngsters a playground under the trees at home. It will keep them out of mischief and relieve the busy mother during the hot days of summer. The house can be kept in better order, and more work can be accomplished by the mother.

CHAMBERLAIN'S TABLETS

PRICE 25¢

Keep Your Bowels Clean

Month's treatment in a package. 2

She Did Not Heed the Danger Signals

BUT DODD'S KIDNEY PILLS CURED HER DIABETES

Mrs. McDonald Might Have Saved Herself Months of Pain, Sleeplessness and Anxiety by Using Dodd's Kidney Pills Earlier.

Grand Narrows, Victoria Co., N. S., June 15 (Special).—That Dodd's Kidney Pills will cure kidney disease in its worst form is evidenced by the case of Mrs. Roderick McDonald, an estimable resident of this place. Mrs. McDonald suffered from diabetes for two years, and found her first relief in Dodd's Kidney Pills.

"I am sure I would be in my grave today but for Dodd's Kidney Pills," Mrs. McDonald states. "The doctor attended me for five months for diabetes, but I was worse when I stopped taking his medicine than when I started. I could not get a wink of sleep.

"As soon as I started taking Dodd's Kidney Pills I fell in a solid sleep for one hour, and soon I got so that I could sleep fine.

"Dodd's Kidney Pills have done so much for me that I feel like recommending them to everybody."

Mrs. McDonald states that her earlier symptoms were shortness of breath, dizziness, backache and a bitter taste in her mouth in the morning. All these are symptoms of kidney trouble—danger signals that no one can afford to neglect. Had she heeded them and taken Dodd's Kidney Pills she would have saved herself months of pain and anxiety.

CONSUMPTION

The history of consumption begins many years before the birth of Christ. At that time it was recognized that the disease was contagious, although people were ignorant of its cause. But the treatment was country air, sea voyages, high, dry climates, and living in pine forests. In our days the disease is known as consumption, tuberculosis, phthisis, and "the great white plague."

The germ of consumption was discovered in 1882, and since that time progress in treatment has been more rapid. The germs of tuberculosis are exceedingly small, as germs go, and they multiply rapidly within the body. They are difficult to kill with antiseptics. Nor are they destroyed by medicines of such kinds and strength as can be taken into the system. The germs are not killed by freezing. Even if they become perfectly dried out, it may require months before they lose their vitality. But when exposed to sunlight and fresh air they are destroyed in a few days, or sometimes even in a few hours.

We do not inherit tuberculosis from our parents. Whether a predisposition or weakness is transmitted from parent to child is not known. There is really little evidence that such is the case.

The germs of tuberculosis are abundant in every community. There are always cases from which the infection may be spread, but it requires something more than the germs to give us tuberculosis. Every individual of mature years can be reasonably sure that he or she has at some time taken into the system very many of these germs. It would be impossible to avoid them entirely, because of their great abundance in the air, food, and water.

The fact that we take germs of any knid into our body does not of necessity result in developing disease. If we lack resistance the infection may develop. If we are normally resistant and in good health almost any quantity or kind of germs cannot infect us.

By this we may know that it requires something more than the mere entrance of consumption germs into our body to give us the disease. Consumption is not necessarily fatal. It is a curable disease. It is just as curable as typhoid fever, except that it requires years instead of weeks to effect a cure.

Not every person afflicted with tuberculosis can recover, because some people lack inherent body resistance, or by habits and diseased organs have lost the normal power to resist microbic infection.

In the treatment of tuberculosis two things are vitally important. The patient must preserve the body strength, and he or she must live in the fresh air. Many other things are necessary, but these are most important. To overtax the physical strength when weakened by this wasting disease is almost suicide. To avoid the outdoors and fresh air seals one's doom.

Becoming infected with tuberculosis need not deprive us of all hope, for there is within our body a mighty ally with which to make war upon these invading microbes. There is in our blood a great multitude of white blood corpuscles, known as leucocytes. These leucocytes are the standing army of our bodies, by means of which we defend our system against the invasion of disease germs. When an injury to the tissues occurs there is placed around the wound a guard of leucocytes, which prevents the germs from passing into the deeper tissues. If the germs overpower the leucocytes or destroy them, as they sometimes do, the defence of the body is gone, and most likely the germs will pass into the deeper tissues, and blood poison will result. If the leucocytes defend the system successfully the injury recovers in a few days, or may go unobserved altogether.

The size and efficiency of this leucocyte army of defence fortunately do not depend upon congress. But it does depend upon you. It depends upon the way you have lived. If your system is in good condition this army will be active and efficient. If the body has been abused by dissipation, rich, indigestible foods, lack of exercise and fresh air, your fighting force will be a poor makeshift that cannot defend you in time of need.

This ability to destroy germs is known as body resistance to disease. Persons who live rightly have this power highly developed, and are rarely sick. Those who are frequently sick have destroyed this resistance by their bad habits of living. In a fight for life and health every organ and every function must do its share to assist

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited.

Good-by, Guess Work

THE New Sharples "Suction-Feed" is the only cream separator which eliminates guess work from cream production. All other separators have to be turned at exactly the speed indicated on the crank or they will lose from 7 to 13 pounds of butterfat per cow per year. The Purdue Experiment Station and other scientific investigators have proven these figures (see Bulletin No. 116, Vol. 13.)

This "guess" speed is used by 19 operators out of 20, because it is impossible to turn the crank at exactly the right speed.—It is much easier to turn it slower—and, whenever you do, you lose cream. Even a speed indicator will help but very little, as you won't and can't watch it every minute.

So we say to you dairymen: Quit guessing about your separator speed and your separator profits. Use

THE NEW SHARPLES SUCTION-FEED

Separator and know that you get *all the cream all the time.*

Whether you turn faster or slower, the bowl of the Suction-Feed *drinks in just the right quantity of milk.* The feature is entirely automatic; if you are tired, you turn slower (which is easier) and, if in a hurry, you turn faster and finish so much sooner. No matter how you turn, the New Sharples always skims clean.

The Sharples cream is always of *even thickness,* whether you turn fast or slow. The Supply can is but knee high so you can fill it without any back breaking effort. The three-piece Sharples bowl is lighter and simpler than any other—*no discs to wash.*

All these money-saving and trouble-preventing features are described in a handsome catalogue; ***"Velvet" for Dairymen.*** Send for a copy, now, while you think of it. Address Dept. 79

The Sharples Separator Co.

Toronto - - - - Canada M

Clean to handle. Sold by all Druggists, Grocers and General Stores.

the body in eliminating the added poison from the tubercular lesion.

If you would recover from a disease of this kind you must be a good fighter. Do everything that will destroy the microbes within you, for your own sake. Do all that you can to protect those of your family and friends who are jeopardizing their life and health for you. No one thing will cure you. Medicine will not effect a cure, but it is sometimes necessary to assist the body functions. It is ammunition to the army of defence. Recovery is possible, as many have recovered to live useful, happy lives to old age. But you must not neglect any one thing.

Tuberculosis is less deadly than it has been heretofore, because we know more about treating the disease. But the germs are no less virulent. By improved sanitation the germs will be better destroyed and the infection less prevalent. By a better understanding of the disease and the way in which it is acquired the public will be better able to avoid infection. By keeping our bodies perfectly healthy our resistance can be increased.

Body resistance, or ability to withstand infection, is dependent upon the activity of the body functions, and body functions depend upon the care we exercise in our eating, drinking, working and playing.

About the Treatment

If you were told you had tuberculosis you naturally would feel depressed. Perhaps you would cry, or curse, depending upon your temperament. Then you would think seriously.

Formerly the first thought was a change of climate, and visions would appear of that great, wide west, with high mountains and broad plains—a land of dry winds and bright sunshine, so destructive to the germs of consumption. But in that golden west, so blest with health-giving climate, there are many hardships for the invalid. Everything must be bought with a price, and there are many things needed in the desert country that money cannot buy.

To one accustomed to the green fields and fertile farms of the east, with its abundant rainfall, these dry, sandy plains of sage and cactus soon lose their attractiveness. Rugged mountains and painted canyons cannot for long replace the home surroundings, be they ever so humble. There will steal into the soul an uneasiness which no scenery can replace, and it requires a will more adamant than the very cliffs to conquer this restless longing for home and loved ones, so destructive to recovery.

Fortunately it is no longer necessary that you go far from home. Many states have free sanitariums where you can be cured at little or no expense, and be within easy reach of friends.

The treatment of tuberculosis is reconstructive rather than medicinal. It is hygiene and diet, not drugs. Medicines alone are useless and serve only to assist the body functions, and if you are being wisely treated drugs will receive very little consideration. Let me repeat: medicines are almost useless in treating and curing consumption except to relieve certain distressing complications.

Your ability to digest and assimilate foods will determine your recovery. Usually the digestive organs will perform the work well and good, provided you are knowingly advised by an expert in this line. If your doctor tells you he can cure you with medicines, go immediately to another doctor. And let me say again that medicines have failed utterly as a cure, regardless of what you may read in advertisements. Medical science has discovered no specific other than pure air and sunshine, along with nourishing foods and rest from physical exertion. Therefore live in the pure air at all times.

If these things will destroy the germs of consumption after they have invaded the body, how easily, by using this same pure air and careful living, could we keep our bodies too resistant for the tuberculosis germs to gain a foothold.

In the treatment sound common sense must be used at all times, and the hours spent outdoors must be varied according to the weather and the season. The tent life is advisable, provided the tent is constructed with windows or other means of ventilation. The ordinary canvas tent that will protect against rain is too closely woven to allow sufficient interchange of air within. So that the popular tent idea is good only when some other more suitable arrangements cannot be provided.

The object of the fresh-air treatment is to keep the body functions more acute by perfect oxidation. By supplying a large amount of fresh air the tissues are better prepared for encapsulating tubercular germs, by which process they are rendered inactive. So long as the resistance is sufficiently high the germs will be held at bay until the wounds can heal and form sear tissue. These scars will imprison the germs until each time as lax habits and dissipation will again weaken the body and give them mastery over the protecting cell walls.

In the matter of foods it is useless to attempt dieting and forced feeding, except under directions of an experienced dietitian. The doctor in general practice lacks training along this line. Without forced feeding at the critical times you cannot build up your wasted muscles and nerves. Rich foods and an abundance of them are necessary, but they must be taken regularly and according to directions as to time and amounts. Otherwise the stomach will become deranged and a serious damage result.

Rest is necessary. It is just as important in the upbuilding process as the foods. To overtax the physical body when the system is struggling for mastery over the invading germs may turn victory into defeat. In the early part of the disease days in bed are well-spent days, provided you are breathing pure air and being sustained by suitable foods. Later in the treatment exercise is desirable, but such a thing as work must not be considered until you have fully recovered.

Being treated in a sanitarium is better than attempting it in your own home. It matters not if you are wealthy, you cannot have the rigid, careful, trained nursing, feeding, and enforced rest that is provided in the better institutions given over to this kind of work. By all means go to one of them until you get beyond the danger mark in recovery, and by so doing you will enlarge your chances of getting well, and at the same time will learn what to do, and—most of all—what not to do. The aversion to such an institution is soon dispelled, and the advantages are far beyond the necessary cost to one fighting for his life.

Cough is usually present in tuberculosis of the lungs and throat. By it the poisonous matter is thrown out. This is a benefit to the patient, but a menace to the public. Since this expectorated matter contains millions of the tubercular germs, it is important that it be burned. No other disposition of it is safe. Antiseptics are too uncertain. The spittle should be caught in cups made for the purpose, or in gauze napkins, which can be burned before they become dry.

Fever, which is usually present, is due to the absorption of the toxic substances. It has little significance and will disappear with improvement in health. It can be safely disregarded. Chills and night sweats are due to the same general cause. They will disappear quickly when the system is freed from the poisons of the tubercular lesion.

I have told you little in detail of treatment and diet. The seriousness of this disease does not warrant any wasting of time in home treatment. You require the skill of doctors and nurses who are trained in this work at the earliest possible moment. You cannot yourself cope with such a disease, and recovery is yours if you will but go about it in the right way. Unfortunately, not every one can get well, because some persons lack that force of character and stick-to-it-iveness to carry the treatment to a successful recovery. But they are the exception.

To review briefly: The treatment of consumption is not by medicines. Food, fresh air, and preservation of the body energy will effect a cure. Should you become infected, go at once to a sanitarium devoted to the treatment of this disease. After a few months' training you may be permitted to continue the treatment at your home. You will have learned how to eat and sleep and rest, how to care for the body, and how to protect those about you. You will have learned the secrets of right living. After you have learned these things and improved sufficiently in health, it may be advisable to seek a drier atmosphere and more sunshine, where with the aid of good climate you may with reasonable assurance live out your allotted three score years and ten.—Julian Clarke, M.D., in New England Farm and Home.

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14

MAKING THE HOUSEKEEPING EASIER

At exhibits of model kitchens or displays of the latest labor saving devices I often hear women remark: "Oh, if I only could afford those machines, and have every new thing that comes out, I would be able to make my housework easier."

But I have repeatly found it true that it is not an array of housekeeping tools and devices which is needed to make work easier. The most important thing is, first, for the woman to study her own home or the conditions surrounding her work. The second thing is for her to watch herself at work and the methods that she uses.

In other words, housekeeping can be made easier by better arrangements and better methods; it does not depend on expensive tools and equipment entirely.

Since 70 per cent of all the time given to housework is generally spent in the kitchen, or on cooking and serving meals, it is in the kitchen that we must begin to simplify housework. Why is it that kitchen work takes so much time and is considered the most drudgifying perhaps of all housework? First, because the kitchen is usually not arranged for the comfort of the worker.

"But my kitchen was built this way—we can't afford to rebuild it," is a frequent protest. It is true that most kitchens, being built by men, who do not work in them, come with shelves too high and sinks that are too low, and are built without any consideration of the work to be done in them. But even if we do not own our home, an understanding of how a kitchen should be arranged to save steps and work will help every homemaker. A step-saving kitchen does not necessarily mean expense. It only means a better arrangement based on the work that is done in it.

The second thing which makes housekeeping easier is better methods of work. This means trying to find how to do any one task in a simpler, easier way. There is room for improvement even in the traditional drudgery of dish washing! Or in making beds, or preparing vegetables, there is a way that is hard and a way that is easy. It is finding this easiest way which makes housework less fatiguing. For example, dish washing is unpleasant mainly because the sink is so low we have to bend, or it may be so shallow that the water slops over, or the drain may be placed so that the work is awkward, or the sink may be in a dark, unventilated corner. By changing these conditions, and your method of work, using the right temperature of water so that dishes drain themselves, much of the drudgery will be eliminated, and the time cut down perhaps from forty-five to twenty-five minutes.

Any housekeeper, in however moderate circumstances, can follow the ideas of the "new housekeeping" because they depend on her skill and not on expensive equipment alone.

POINTED PARAGRAPHS

One way to make friends—keep advice to yourself.

The supply of common sense never exceeds the demand.

A miser is a great lover of generosity—in everybody except himself.

Many a man doesn't realize what he is up to until he is called down.

DIARRHOEA

Was Caused By Change of Diet, Etc.

Diarrhoea arises from many causes such as, change of diet, change of water, change of climate, catching cold, the eating of unripe fruits, or anything that will cause or induce an excess of bile.

On the first sign of any looseness of the bowels it should not be neglected, but should be looked after immediately, for if not diarrhoea, dysentery or some other serious bowel complaint may ensue.

Mr. Geo. Smith, Victoria, B.C., writes: "It is five years ago since I first tried Dr. Fowler's Extract of Wild Strawberry. I was then on a timber survey, and suffered greatly from diarrhoea, caused by change of diet, etc. A friend in the party gave me a few doses which gave me great relief. Since then I have been in survey work, and would as soon think of starting out on a trip without my compass and blankets as without my supply of Dr. Fowler's Extract of Wild Strawberry, which I consider the woodsman's best friend."

Dr. Fowler's Extract of Wild Strawberry has been on the market for the past seventy years, and is universally known as a positive cure for all complaints arising from any looseness of the bowels.

When you ask for "Dr. Fowler's" be sure you receive what you ask for as there are many rank imitations of this sterling remedy placed on the market to try and fool the unsuspecting public.

The genuine is manufactured by The T. Milburn, Co., Limited, Toronto, Ont.

Price, 35 cents.

LABOR-SAVING DEVICES FOR THE HOME

Miss Eadie's exhibit of "Labor-saving Devices for the Home" at the Women's Convention held in the Manitoba Agricultural College February 16th, was most interesting.

Grouped around the big Assembly Hall were some twenty girls, students of the college, each exhibiting some one device to save labor. Here is a list of the articles shown:

1. Wooden spoon, for use in cooking acid foods; will not tarnish.

2. Spatulas, 2 sizes; these are soft flat knives used for scraping bowls, slipping pies, etc.

3. (a) Measuring cup. Each cup holds exactly 16 tablespoons.

3. (b) Regulation tablespoon.

3. (c) Regulation teaspoon.

Three teaspoons equal one tablespoon. Sixteen tablespoons equal one cup.

4. Home-made shelf—On hinge, so it will open and close. To be placed behind stove to hold extra pans, or be next sink to hold extra dishes.

5. Blocks of wood to place under bed posts to raise bed higher during sickness. Makes the nursing easier.

6. Pulley clothey line—Pulley costs 25c, wire line 25c.

7. Vacuum cleaner—Small hand size costs $7.00; sold by Reeves, Melford, Conn.

8. Cupboard for articles used in keeping the house clean. On a shelf were all bottles, such as furniture polish, metal polish, wood alcohol. Beneath was a place to hang each mop, broom, and dust pan. I noticed the carpet sweeper stood up on its side so as not to flatten the bristles; the broom hung upside down.

9. Design for farm woman's office. This contained a plain table, chair, waste paper basket. On the table stood a box containing 1,000 tickets. These can be bought at Eaton's for 75c a thousand. On these cards was kept family accounts. One section wa for recipes. Some kept count of lin ens, contents of pantry, things needed In fact, anything the housewife wanted to remember. On the table also was a flat basket holding things of the week, like bills, receipts, letters to answer, etc. On a shelf above were three files to hold accounts, correspon dence, and clippings.

10. The next exhibit was a plan for an ideal kitchen. On one side of the room were the things used in preparation of a meal—ice box, then kitchen cabinet, then stove and table. Then came the dining room door. On the other side of the room were things used in clearing away the meal—china cabinet and kitchen sink, with it draining table each side, one for dirty dishes, one for clean.

11. Next came a vacuum sweeper—used like a carpet sweeper.

12. A white kitchen stool that screwed up and down to the required height. This one is sold by Shander and Fisher, and costs $5.40. An old piano stool would do as well. This is useful to sit on when ironing or peeling vegetables.

13. A schedule or plan for a day's work in the home. Although the day runs from seven a.m. to seven p.m., the work is so planned that the housekeeper has three hours off each afternoon. This makes a nine-hour work day. Long enough for any one.

14. Next came asbestos holders for lifting things off the stove.

15. A small towel on a loop; the loop is of tape, and slips over the apron belt at the right side; very useful when cooking to wipe the fingers on.

16. A laundry cupboard holding all things needful for wash day and ironing day.

17. Adjustable table. The top could be raised or lowered to suit the size of the worker.

18. Stainless steel knives. They sell for $9.00 a dozen.

19. Sliding larder; to send food down to the cellar to keep cool—a dumb waiter.

20. Porch larder, screened and holding deliveries or other food, cool and away from flies.

21. Fireless cooker, home made. Just a tight box, with a lid on a hinge and plenty of loose excelsior. The simplest device of them all. Just bring the food to the boiling point, cover with pot lid, and pack in the excelsior, with more excelsior packed down on top. Shut the lid, and food will keep on cooking.

22. A kitchen table on legs for use in cooking. Gather materials on it, mix them, put on the stove, then push table and dirty dishes over to the sink. It saves many steps. The top should be of glass or oilcloth.

23. Dinner wagon—table with shelf to carry dinner into dining room and then use to bring out the dirty dishes.

24. Window larder—made of frame work of wood to fit an open window. Each side is covered with wire screen. One side opens with a door. Daily "left overs" are here kept cool and fly-proof.

Over in another building merchants were showing: Steam cookers, by which a whole meal can be cooked over one little lamp; manufacturer's fireless cookers that will roast meat or bake break, cook pies or brown anything; gasoline engines running the washing machine.

Before the exhibit closed Miss Eadie read a most interesting paper on the value of these in the home.

2 Miles to City

75 Acres—$2500

Stock, Crops, Tools Included

Here's one of the best little farms in Kennebec Valley; daily mail, near neighbors and school; a great hay and potato farm; machine-worked fields; cutting 45 tons hay; spring-watered pasture; abundance wood and fruit; attractive 7-room house, painted, with 2 barns and poultry house. Aged owner's wife is invalid and someone will get a big trade here. $2500 takes it and if you act quickly he will throw in pair good horses, cow, poultry, wagons, carriages, tools and household furniture, all in good condition; also 7 acres corn, potatoes and grain. Part down and easy terms to the right man. For full details see page 6, "Strout's Money-Making Farms," copy free. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass., Tel. Main 3348.

A SUMMER DANGER

Ptomaine poisoning is a form of illness which is entirely due to carelessness with regard to food, and therefore avoidable. Those numerous headaches, fits of heaviness, indigestion, listlessness, weariness, etc., which we put down to the heat, are far more often the results of slight ptomaine poisoning. Some microbes manufacture the ptomaine poison without creating any noticeable odor, and it is these which are the real danger. A small dose of powerful poison in a single mouthful of fish will make a person uncomfortable for the rest of the day and greatly reduce his power to work and his capacity for enjoyment. In the home, food should be kept in a cool, well-ventilated, and absolutely clean place. Anything that seems to be stale, or has the least sign of being tainted, should not be eaten. The foods about which we need to exercise the greatest caution are cold veal, sausages, pork, veal and ham pies, goose, duck, and venison kept for too long a time, mackerel, crab and other shell fish; but beef and mutton may also sometimes, though not often, be poisonous. A great deal of misconception prevails as to the effect of cooking. Cooking will kill the living microbes, but it will not remove the poison. Thoroughly cooked meat may therefore be dangerous, though it is in cold meats, pies, etc., we get most of the ptomaines. Cooked meat or fish put aside for a day or two often become unwholesome from the presence of ptomaine poison, and sometimes so much so as to cause serious illness. To escape this danger altogether is impossible, but every effort should be made during the summer to avoid eating food that is tainted, however slightly, and to be extremely careful about the cleanliness of the larder and all cooking vessels.

Little Miss MAIDEN CANADA Registered

"Help Yourself!"—

There are times in the warmer season when you don't feel like drinking cocoa. At such times learn to make the most of your cocoa, bring it down from the shelf and make it pay for itself by icing your cakes with it.

Perfection Cocoa is the best and most easily adapted to such purposes. These warmer days, try your hand at it.

COWAN'S COCOA "Perfection Brand"

A-18

AIN'T IT FINE TODAY!

Douglas Malloch

Sure this world is full of trouble—
  I ain't said it ain't.
I have had enough, an' double,
  Reason for complaint.
Rain an' storm have come to fret me,
  Skies were often gray;
Thorns an' brambles have beset me
  On the road—but say,
  Ain't it fine to day!

What's the use of always weepin',
  Makin' trouble last?
What's the use of always keepin'
  Thinkin' of the past?
Each must have his tribulation,
  Water with his wine—
Life, it ain't no celebration.
  Trouble? I've had mine—
  But today is fine!

It's today that that I am livin',
  Not a month ago;
Havin', losin', takin', givin',
  As time wills it so.
Yesterday a cloud of sorrow
  Fell across the way;
It may rain again tomorrow,
  It may rain—but, say,
  Ain't it fine to day!

GERANIUM BEDS

A solid mass of scarlet geraniums is exceedingly ornamental, and there is

HOME 6Af' VV..er no more popular bedder for the lawn. I usuaiy pot two or three of my largest and healthiest bushes in the fall, and keep them over winter. In the spring I take a sharp knife and cut the plants in pieces for cuttings. I find tin pans filled with earth the most satisfactory thing to start these in, since the tin absorbs the heat, and thus the soil is kept warm. Pans about four inches deep are best. These should be filled with a soil mixture composed one part good garden soil, one part leaf mold, and two parts sand, but one must watch that they do not become dry. Put a little charcoal in the bottom of the pans for drainage. It will take cuttings about a week to come well rooted.

YOUR DAUGHTER'S CONFIDENCE

The best way to shut a girl's mouth when she comes to you with confidences about her lover, is to show that you are disturbed or offended by what she tells.

The very fact that she has told you is a thing to give thanks to God for, for it gives you a notion of what you must prepare to combat. If you object to what she has told you, convey your objections indirectly, make her condemn herself or him from her own mouth, call her own common sense into play, teach her to think for herself in this as in other matters.

A hasty outbreak may cost you her confidence forever and a day. Patience and tact, and tender, everlasting love will do for you and her what no amount of storming and force could do.—A Maine Mother.

CONSTIPATION DURING THE RUN-ABOUT AGE

In children of the "run-about" age the ideal treatment for constipation is administered through the diet. All meals should be at regular intervals. Add different laxative foods to the diet, such as porridge made of Graham flour and oatmeal, stewed fruits, rare scraped beef, and Graham, oatmeal, or Indian meal crackers. Remember that the more milk is heated the greater tendency it has to constipate. After the child is two years of age, reduce the total quantity of milk and give plenty of fresh vegetables, stewed fruits, and fruit juices. Plenty of butter is also good in overcoming costiveness at this age. Olive oil is excellent. Don't forget to give generous drinks of cool water between meals.

When dietetic measures fail and massage has been ineffective, we must get relief by other means. When the daily motion has not occurred, the simplest measure is the inection of several tablespoonfuls of warm water gently introduced into the bowel by a small rubber ball syringe. This will generally supply the needed stimulus for the natural emptying of the bowel. The soap stick or pencil of castile soap gently introduced into the bowel is often satisfactory.

An enema of two or three ounces of olive oil given through a soft rubber tube or catheter at bedtime will generally bring an evacuation after breakfast. A similar enema of glycerin will bring a more rapid result. Suppositories of gluten, glycerine, or soap are other means of temporary value. None of these measures, harmless as they are, should be adopted habitually, on account of forming a permanent bad habit by prolonged use. Above all, avoid the use of durgs—even the simplest laxatives or cathartics are not without danger.

Not So Bad

Silas—Did that city fellow have any luck with his vegetables last year?

Hiram—In a way. He got a sunstroke and collected $200 from a health insurance company.

They all come out of the "BEAVER" FLOUR Barrel

Apple Pie and Hot Rolls for supper—Jelly Roll and Chocolate Cake and delicious homemade Bread for dinner—Puddings and Doughnuts, and Cookies and Raisin Bread—all at their dantiest and best when made of

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If you have never tried a blended flour, you cannot imagine what a difference there is between "Beaver" Flour and the usual western spring wheat flours. Get a sack of "Beaver" Flour at your dealer's, and try it for yourself.

DEALERS—get our prices on Feed, Coarse Grains and Cereals. 198

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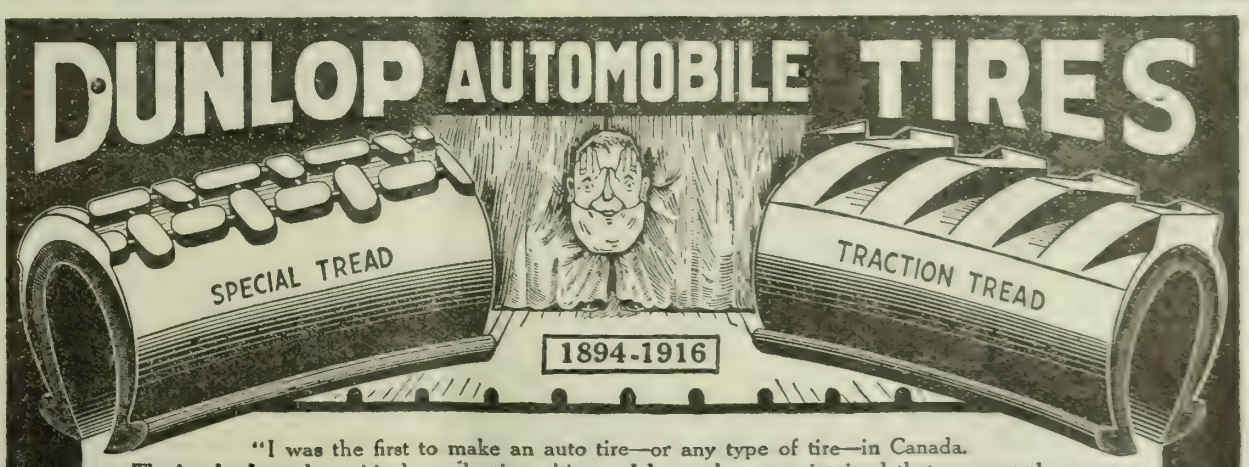

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"Dunlop 'Traction' and Dunlop 'Special'—and the rest of the Dunlop Tire Family—have been O.K.'d by me—the Quality Censor." —*Handy Andy.*

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A57

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THE CABBAGE ROOT MAGGOT—(PHORBIABRASSICAE BOUCHE)—AND ITS CONTROL IN CANADA

(Continued from page 595)

Dr. Aldrich has identified adult flies bred from radishes, cabbages, and cauliflowers at Agassiz, B. C., as Phorbia brassicae. We have no records of Phorbia planipalpis occurring injuriously in British Columbia.

Development—Number of Generations

We have found it an extremely difficult matter to determine with absolute accuracy the exact number of generations that occur in a season. In all our work with this insect we have not been able to breed a series of flies continuously through the entire summer from the progeny of flies reared from overwintering puparia. From the foregoing records of the life history of the insect we have observed that under conditions prevailing at Agassiz, B. C., the individual egg stage covered a period of from 2 to 10 days; the larval stage from 19 to 32 days; the puparium stage from 15 to 18 days and the adult stage from 3 to 9 days. Hence we gather that the length of the various stages from egg to adult covers a period of at least between 39 days and 69 days. As stated below, eggs may be continuous from that date until October 22, a period approxmiately of six months. At Ottawa, Ont., we have a minimum record of 37 days from the time the eggs were laid in spring until the fly appeared.

It would appear, therefore, on theoretical grounds and by analogy, that at least three generations, and possibly four, occur during the year in British Columbia. It is highly probable that in certain seasons a percentage of the puparia of the third generation pass the winter in such condition, the flies not emerging until the spring of the following year. As mentioned elsewhere, no flies emerged in an outside insectary after September 27, although emergence was continuous previous to that date.

First Generation.—The first generation arises from eggs deposited by flies emerging during the first favorable days of spring from overwintering puparia. The date when the first egg is laid varies considerably, according to the season. It has been observed that oviposition may commence in the first week of April (Agassiz, B. C.), provided weather conditions are suitable. In an ordinary season oviposition is well under way during the last quarter of that month. In eastern Canada (Ottawa, Ont.), however, where the season is more backward, oviposition has not been observed before the middle of May.

The period of emergence of those flies developing from overwintering puparia continues in accordance with the effect of the climatic conditions, but it is estimated that, as a rule, eggs may be deposted from these flies during a period of two months. For instance, if eggs were laid at Agassiz, B. C., on April 10, as they were in 1915, deposition by flies of the first generation continued until approximately June 1. In late or backward springs, however, the egg laying period would, of course, be extended.

Second Generation.—Taking the average of 54 days, which we think to be a fair period from egg to adult fly during the growing season, the flies of the second generation in the Lower Fraser Valley of British Columbia would commence to oviposit during the first week of June, and the flies developing from maggots from these eggs would begin to appear toward the end of July. It must be remembered, however, that individuals of this generation arising from belated flies of the first generation would continue to emerge most probably until the middle of September. Thus the eggs, larvae, puparia or adults of the second generation may occur any time between the first week of June and the middle of September under conditions prevailing at Agassiz, B. C., in 1915.

From the larvae which emerged from eggs deposited at Agassiz on April 10, puparia were formed on May 6, and adult flies appeared about the end of that month. Owing to the fact, however, that the egg laying period continues approximately until June 1, in seasons such as 1914 and 1915, the emergence of the flies developing from these late deposited eggs would be about July 10. Under absolute field conditions eggs were observed on plants on May 13 and the flies resulting from these eggs emerged on June 28, a period of 46 days from egg to adult. It must be remembered, however, as shown before, that the length of the life cycle of the insect varied from 39 to 69 days, the average of which is 54 days. In eastern Canada (Ottawa, Ont.), in 1910, numbers of flies of the first generation emerged in the laboratory from June 21 to June 27 from puparia collected in the field. The plants (cabbage and cauliflower) were transplanted on May 13 and the eggs laid about May 16. The length of the life cycle here varied from 36 to 42 days, the average being 39 days. In the same year Schoene found in New York State that the average individual life of the first generation was 55 days. This latter period agrees very closely with the average life cycle at Agassiz, B. C., as stated above.

Third Generation.—Using the period of 54 days, again, in which development may take place from the egg to the adult, it is posisble for eggs of the third generation to be deposited at the latter part of July, in such a season as experienced at Agrassiz, B. C., in 1915. Egg laying may continue until about the middle of September; thus maggots, puparia or adults developing from these eggs may be found through November and possibly December as well at Agassiz, B. C.

It should be fully realized, again, that the 54 days given as the period for development from egg to adult is arbitrary and merely taken for the sake of convenience in illustrating the overlapping generations. The actual period extends from 39 to 69 days (1915) according to our work, although Schoene has shown that the period in New York State may extend from 34 to 88 days (1910).

Thus any example of the insect occurring July 27 (1915), for instance, at Agassiz, B. C., may be the puparia or the adult of the first generation of eggs or maggots of the second or third generations. We have found eggs, maggots in all stages of development, and puparia, present in or near individual plants, at one and the same time.

Fourth Generation.—There is undoubtedly in the Lower Fraser Valley of British Columbia a fourth generation of the Cabbage Root Maggot. This may be either complete or partial, according to autumn climatic conditions. In 1915 at Agassiz, B. C., eggs were laid almost continuously every day from April 10 to October 22.

As already stated, there is a variation in the dates on which the first eggs are laid in spring in the provinces of British Columbia and Ontario. Therefore, due latitude must be allowed for the commencement and termination of the various generations.

The question of hibernation is discussed later in this article in its relation to the fourth generation, and probably to the third generation also.

(Continued in our next issue)

THE WOMAN OF TODAY

He was a true philosopher who said that the more fruitful a theme the greater the difficulty to write about it. Could there be any more abundant subject than the women of our land? And yet how difficult to say anything at once new and interesting. We can tell of incidents of heroic sacrifice, but to mention such things of a few is to ignore thousands of similar cases. We can tell of the woman who in order to gratify the desire of her sixteen-year-old son to join the colors went out and gathered in twelve recruits. Her deed was noble, marvelous in its motherly and patriotic devotion, but it cannot be emulated by all, and it is questionable if it is desirable that it should be. Other mothers have really done as much in sacrificing their only offspring and in dismissing them with a kiss and a fervent "God bless and guard you, my boy." It is the number of such sacrificial incidents that makes them difficult to dwell upon.

Yet there are many cases in which the mothers cannot bring themselves to make the divine sacrifice, and it is to be feared that usually in such instances they are not urged very strongly to do so—in other words, that the young men are perfectly satisfied to take shelter behind the maternal skirts. However, it is not of the men, but of the women and their work, that it is sought to speak. If they are not all Spartans they can each and every one render some service, or, to use a much hackneyed phrase, "do their bit." And the majority are doing it. In innumerable ways they are rendering service. There is probably not one of the hundreds of Women's Institutes in the country that is not working for some branch of helpfulness. There is not a woman's organization of any sort that is not in some manner contributing to the great cause. The questio nis: Can they do more?

As the war goes on and extends into the future the necessities will become greater and more urgent. Supplies of all sorts will be harder to get, while at the same time there will be more in need. The responsibilities for taking care of the country's defenders will increase, and thus grows the importance of every women in some way taking a hand.

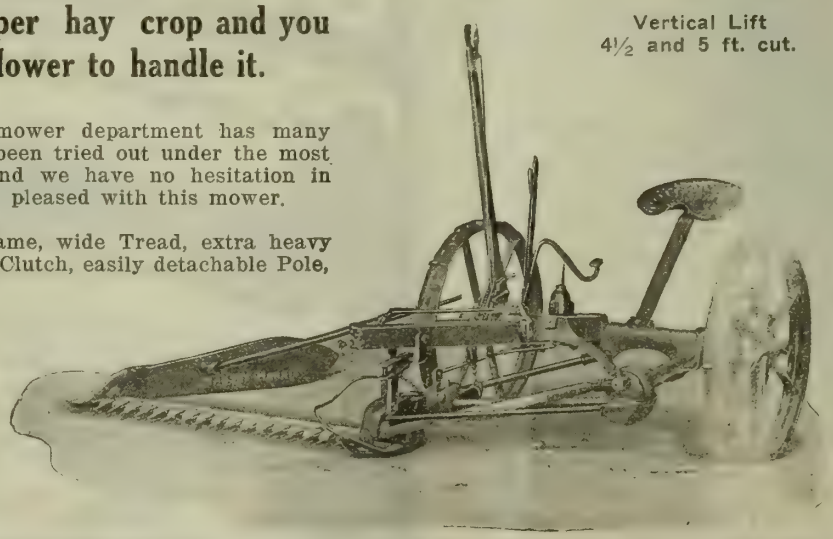
Here is a reliable Mower for cutting your hay

Prospects are for a bumper hay crop and you will need a reliable Mower to handle it.

This latest product of our mower department has many new features—all of which have been tried out under the most difficult and trying conditions, and we have no hesitation in saying that you will be more than pleased with this mower.

It has a strong one-piece Frame, wide Tread, extra heavy Push Bars, Improved Gearing and Clutch, easily detachable Pole, simple and easy Vertical Lift, Under Draft, Flexible Swath Board and many other features you must see to really appreciate.

Our nearest agent will be glad to show you.



MASSEY-HARRIS CO., LIMITED, Head Offices: TORONTO
Headquarters for Maritime Provinces—MONCTON, N. B.
AGENCIES EVERYWHERE

Children can knit and sew and make things useful. In fact, thousands or them are so engaged. But it is a question if more could not be accomplished. Up to date there has been little canvassing for helpful aid. Nearly all that has been undertaken has been voluntarily assumed. The time, it is to be feared, is coming when this will not be enough. In Britain already house-to-house canvassing is being conducted, and women are being asked if they cannot do one thing, to do another. The question is put to them plainly: What will you do to help in the defence of your country, in support of the men who are fighting to keep your homes and land from desecration and violation, for the liberty of nations, for the punishment of wilful, wholesale murderers, and for the honorable observance of sacred treaties? Answers are generally forthcoming in an agreement to supply each week or month some article or articles that will be useful. Information is afforded on the requirements and the rules of the service that is asked. In this way a great deal is accomplish d, women and girls employing many a spare minute that otherwise would be wasted.

Our women are doing much, but are they really doing all they can? As individuals, many of them doubtless are; but are they encouraging others to do likewise? In these days it is hardly enough to sit down and work one's self. Examples must be followed and must be forced along. There is not a woman or a child who cannot in some way help. Comprehensive organization is needed to utilize that way. We should one and all bear in mind that at such a time as the present the non-application or misapplication of effort is as much a sin as wasteful extravagance.

RECENT DATA RE POTASH FROM THE SEA

On the inside back cover of this issue of The Maritime Farmer will be found an article entitled "Potash from the Sea," by J. A. MacDonald, of Prince Edward Island, which will be of interest to many of our readers, particularly to those residing near the sea coast where kelp comes ashore.

Since the cover pages went to press we have received a communication from Mr. MacDonald which reads, in part, as follows:

"Recent data, just received, show that kelp is a much more valuable source of potash than I made it in the article recently sent you.

"Instead of 9 pounds of potash per ton, fresh material, it contains 31 pounds per ton, and therefore instead of being worth $4.50 it is worth $15.50 per ton for its potash alone.

"It is truly a valuable manure and our shore farmers have a mine of wealth at their doors, and are indeed quite independent of the Germans for potassic manure for their potatoes, legumes, etc.

"Following is the data to which I refer."

Central Experimental Farm
Ottawa, June 8, 1916.

John A. MacDonald, Esq.,
Prince Edward Island.

Dear Sir:—

In reply to your letter of the 30th ultimo, we wish to inform you that our analysis of Laminaria longicruris (which is probably similar or identical to the variety of kelp you mention) shows the following composition, calculated to the fresh material:

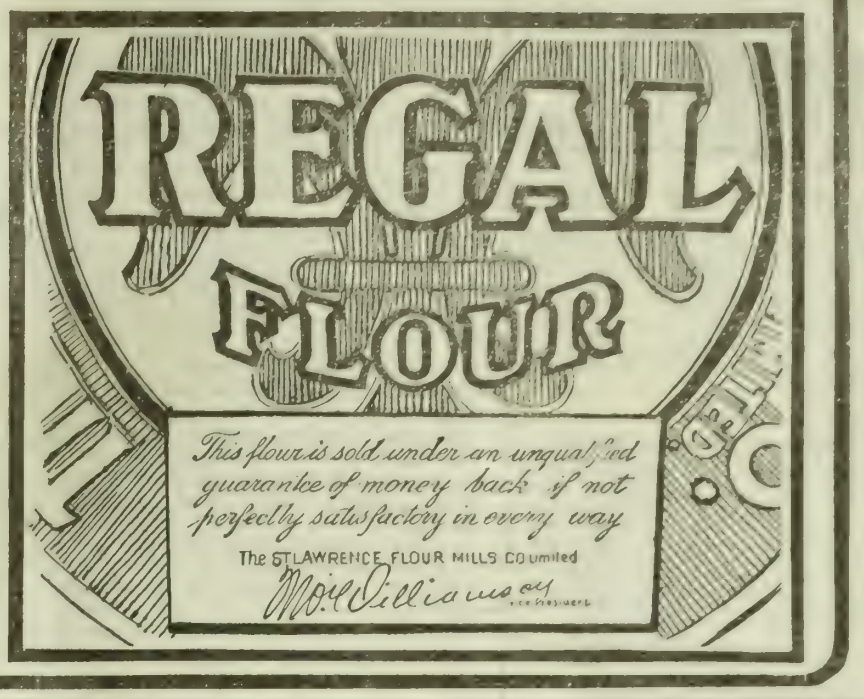
Water, 88.30 per cent; organic matter, 7.15; ash, 4.55; nitrogen, 0.251; phosphoric acid, 0.134; potash, 1.546; lime, 0.075.

The amounts of nitrogen, phosphoric acid, and potash per ton would be, respectively, 5, 2.7. and 31 pounds. When we consider that a ton of good barnyard manure, in which the liquid portion (containing half the nitrogen and three-fourths of the potash) has been carefully conserved, contains approximately 10 pounds of nitrogen, 5 pounds of phosphoric acid, and 10 pounds of potash, then by comparison with kelp the latter appears a much more valuable source of potash.

B. LESLIE EMSLIE,
Supervisor Investigational
Work with Fertilizers.

HERE is a Section of the REGAL FLOUR BARREL LABEL Showing the Money-Back Guarantee.

THE ST. LAWRENCE FLOUR MILLS CO., Limited, Montreal.


REGAL
FLOUR
This flour is sold under an unqualified guarantee of money back if not perfectly satisfactory in every way
The ST LAWRENCE FLOUR MILLS Co Limited

THE RAMBLES OF A CANADIAN NATURALIST

We have just received from J. M. Dent & Sons, Toronto, a copy of "Rambles of a Canadian Naturalist," by S. T. Wood. This author needs no introduction to the reading public of Canada. His articles in the Toronto Globe from time to time have made his name a household word. He has by his writings helped a great many young people, and the older people too, to read the open book of nature. His writings are always descriptiv , and he or she who fails to see the pictures he depicts is dense indeed.

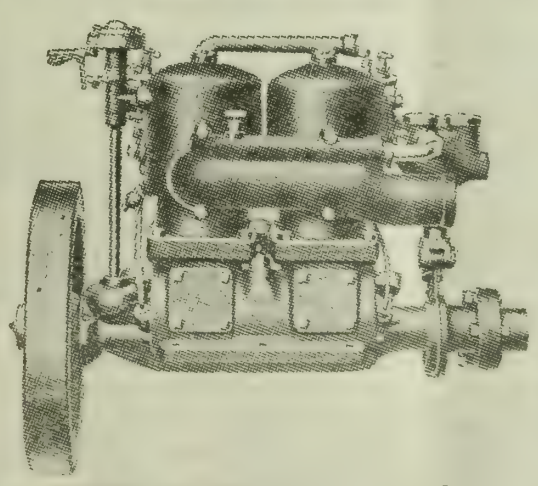
He or she who reads "The Rambles of a Canadian Naturalist" will find it a valuable literary production. Mr. R. Holmes, the artsit who did the work for Mr. Wood's book, is an artist indeed. An international critic who was privileged to look over Mr. Holmes' collection, said he had never een such perfect reproductions of birds and flowers. The artist's as well as the author's work will delight the readers of "The Rambles of a Canadian Naturalist." Secure a copy for the boys and girls.

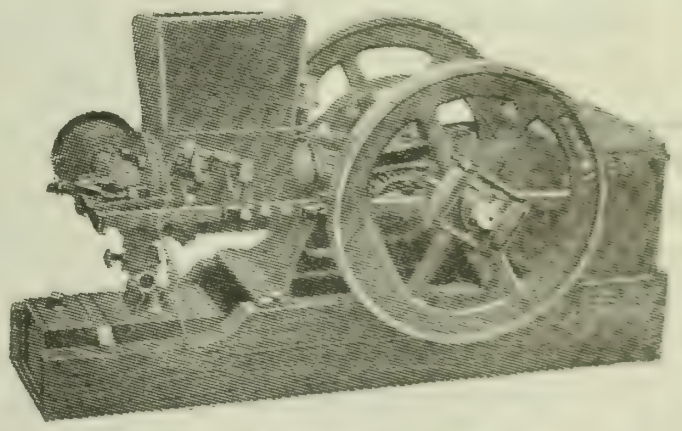
WORMS CAUSE UNTHRIFTINESS

When fowls seem persistently unthrifty, and do not respond to liberal feeding, it is a good plan to kill and examine one or two to see if worms may not be the cause. Oil or turpentine is said to be an excellent remedy for worms. Mix it in a soft mash, allowing about fifteen drops for each bird, and give it in the morning before other feed is given. Keep the birds shut up for two or three hours, and then feed another mash with which half a teaspoonful of Epsom salts is mixed. They can then be allowed to go free if desired. No harm will come from this dose even if there are not many worms present.

There is a great difference in the production of fruit trees. Prof. S. W. Fletcher kept the records for four years on 1245 apple trees. He found that 375 trees average four barrels each and produced 60 per cent of the crop. There were 215 trees which produced less than a barrel each and were a dead loss to the grower. Trees propagated from heavy producers should be worth more than those of unknown parentage.

GUARANTEED ENGINES SPECIAL LOW PRICES





MARINE ENGINES, 2 1-2 to 12 H. P. FARM ENGINES, 1 1-2 to 8 H. P.

STRONG AND RELIABLE—EASY ON FUEL

We offer a limited number of Marine Engines and Stationary Engines at special advertising prices. If you want an engine, write to us saying what work you want to do, and we will send a complete Catalogue and prices. You will wonder how they could be made for the money. Don't let a chance like this slip by you.

WRITE TO-DAY

THE DOMINION GENERAL EQUIPMENT CO.

Saw Mill, Woodworking, Metal Working and Contractors' Machinery. Concrete Mixers and Road Making Machinery

MERCHANTS' BANK BUILDING, ST. JOHN, N. B.

IN WRITING PLEASE MENTION THE MARITIME FARMER.

INSTEAD OF PAINT

DON'T paint your pretty home this season, but use instead Velvex Creosote Shingle Stains. By so doing, you can bring out all the beauty of the wood. And think of the preservative value. Velvex Shingle Stains contain Creosote, the greatest wood preservative known. This means prolonged protection against wind and weather. It therefore means *economy.*

Velvex
Creosote Shingle Stains

Half the Cost — Twice the Wear

Velvex Creosote Shingle Stains cost about half as much as paint. And they wear much better because they penetrate the wood. They do not evaporate or dry out and of course they cannot peel off. These stains come in any color you want. They are very easily applied. You ought to investigate them. We have the complete line and we know you will like them.

Write us for a sample of wood stained with Velvex Creosote Shingle Stain.

Carritte-Paterson Mfg. Co., Limited
Halifax, N. S. St. John, N. B. Sydney, N. S.

"ONLY GOOD GOODS"

You ought to be certain that only the best Materials are used in the manufacture of the

LUMBERING MACHINERY

you instal from time to time. There are innumerable chances for serious and costly accidents when so-called "bargain" goods are used.

The Smith Foundry Co., Limited,
Fredericton, N. B.

Executive Timber.

If you possess the fundamentals of executive ability, energy, courage, endurance, initiative and industry, business training will furnish you unlimited opportunities for making big money. You will have the privilege of naming your own salary. Do not put it off. Start NOW.

Moncton Business College
Geo. J. Schmidt, Principal
Moncton, N. B.

12 Room Colonial House
In Country Village

On the maple shaded street of village opposite church, town hall and library; deep open fireplaces. Stable 40x50 with large carriage shed. Equipment for small store included—shelves, show-case, kerosene tank, scales, etc., etc. One acre garden land; keep a cow and some hens. Crippled owner makes price $1400, part down. Low price also on stock of goods or will put same up at auction. For picture of the attractive house see page 13 "Strout's Money-Making Farms," copy free. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass., Tel. Main 3348.

No Summer Vacation

Will be given this year, but we will do our "bit" by fitting young men and women for the work that is waiting for them.

Students can enter at any time.

Send for catalogue.

THE ST. JOHN Business COLLEGE

S. KERR
Principal.

THE BIOGRAPHY OF BOSSY

(Continued from page 601)

Mr. Bob was taking little Henrietta over to a neighbor-s house, by the short cut through the meadow, when he happened to catch sight of me snuggling up as close to the stone wall as I could get, my tongue hanging out, and my head dragging the bare ground.

He understood in a moment.

"Oh, Henny," he exclaimed to the little girl, "there's poor Boss out in all that hot sun! She'll die. I told that fool man to give her the run of the lot on days like this. Come on—we'll take her down to the creek."

He held his big straw hat over my head as he led me through the gate and along Bennet road to the lower lot—think of that—taking off his own hat for a cow! When we reached the little stream which goes gurgling through a wood of sweet, low-branched maples and dogwoods and sturdy oaks, he filled the old hat with water from the brook and poured it on my steaming head. I was happy that there should be, in all the world, so great and so tender and so godly a man as Mr. Bob.—Springfield News.

THE HORSE INDUSTRY

(Continued from page 605)

farmer has been directed almost exclusively to the sire. True, nothing but pure-breds of good conformation and quality should be used. The time has arrived, however, when in the best interests of the industry, and in order to achieve the greatest success in breeding, particular attention should be given to the breeding mare. The best should be carefully preserved for breeding purposes. The good results from the use of high-class stallions will be greatly minimized if the mares are poor specimens. Mares that are worn out, unsound, faulty in conformation, or affected with any hereditary unsoundness should not be used for breeding purposes. Further, better feeding, care, and management should be practiced in raising the colt. A high percentage fail to develop normally through lack of proper care and sufficient nourishment. Horses are made or marred by the usage they receive when coming to maturity. Careful mating coupled with good feeding and management will result in the production of a high percentage of marketable horses.

In passing, it might be noted that, despite all the educational work that has been done, and despite the various enactments that have been passed in aid of horse breeding, there still is to be found in the country a rather high percentage of horses that fail to pass the remount inspectors. "As you mate, so shall you breed;" or, in other words, if you mate sires and dams that are of poor conformation and unsound, you may be sure that a high percentage of the progeny will possess these undesirable characteristics.

Pure Breds

The breeders of pure breds are today at the parting of the ways. Heretofore the magic word "IMPORTED" has carried much weight. There is much good imported stock in the country. The question arises: Is it necessary to go on importing year by year and paying high prices for imported stock when the breeders, by giving attention to mating and to the feeding, care, and management, which is the other half of successful breeding, can produce a horse as good as, if not better, than a high percentage of the animals heretofore imported? The horsemen of Canada have an opportunity now such as never hitherto came their way. There are many good pure-bred mares in the country as well as good sires. Now is the time for the good horsemen who have the interests of the industry and of the country at heart to devote their attention as never before to the production of more and better horses. Let them not only mate carefully, but feed and develop the progeny, from birth to maturity, as do the breeders of the European countries. Let our importers prove title to their claim of being practical horsemen by breeding and developing high-class animals.

A Pure-bred Market

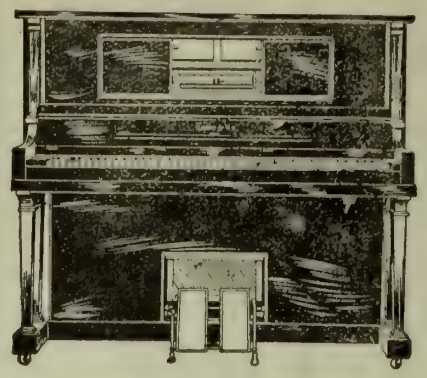
During the past year the Dominion Live Stock Branch has had official inquiry from Australia regarding our horse industry. It was pointed out that after the war Australia would be in the market for good Clydesdales with which to improve the horse stock of the country. Particular attention was drawn to the fact that only good stallions were wanted. The distance from Canada being much less than from Britain, it is felt that horses could be more conveniently obtained here.

Legislation Affecting Horse Breeding

During recent years much valuable educational work was done by the Breeders' Associations and the various farmers' organizations. Ultimately this work brought results. Today in every province except Quebec stallion owners are compelled by Act of Legislature to enroll their stallions with the local Agricultural Department before standing them for service, and to publish in all advertisements a copy of the Enrollment Certificate. It is now possible for all interested to learn from the stallion poster whether a particular stallion is a pure bred, a grade, or a scrub.

The provinces of Saskatchewan, Manitoba, Ontario, and Nova Scotia have gone a step further. In Saskatchewan any district may prevent the use of unsound horses, grades, and scrubs by a majority vote. In the Province of Monitoba only pure-bred stallions are allowed to stand for service. In the Province of Ontario all unsound grades and scrubs must be retired; and in 1918 only pure-bred stallions will be allowed to stand for breeding purposes. In Nova Scotia, as well as the three provinces above mentioned, all horses standing for service must be veterinary inspected, and all advertisements must give a copy of the license granted, which states, not only to what breed the horse belongs, but also whether he is sound or unsound.

By persistent effort and the gradual process of educating the people to the necessity of using better sires, and the profits to be derived therefrom, these useful and beneficial laws have been secured. It will be necessary for the other provinces to immediately enact similar legislation. Otherwise they will not only find themselves outdistanced, but they will also become market centres for the poorer animals. It would appear that a uniform Stallion Enrollment and Inspection Act for all provinces of the Dominion would be a still further step in aid of horse breeding.



At Last ! ! Here is a Small Ideal Player Piano for the Farm Home

What the Farm Home Needs---MUSIC

Here's just the instrument that you have been waiting for, neat, attractive, compact, and a convenient size. How many times have you wished that you could purchase an instrument that would not look too large for your home, that would harmonize with the furnishings and appearance of the room.

Just think of having a player-piano possessing all the requirements of a full-sized instrument but measuring only 4 feet 3 inches high.

This Sweet Toned Ennis Player Piano is a brand new model equipped with all the latest improvements and absolutely trouble-proof.

This beautiful player-piano will bring into your home new joy, love and life. You will never know the joy of being able to personally produce music until you have seated yourself at this responsive player and brought forth from those keys that you thought would be forever silent to you—Music—as the great musicians would play. Whether popular, sacred, opera or dance music your home can have all the music ever written.

Your children will appreciate this wonderful instrument because it will give to them the greatest joy in their life and assist to give them a musical education and create an ear for good music. Make no mistake about the value of this instrument—the price is well within your reach.

The Price is only $450! Small, indeed, when you consider the value and amusement it will be to your life and family. You'll be delighted when you see it. And when you experience the joy of producing music you'll know that it is the ideal instrument at a moderate price.

Simply tear off the coupon at right while you sit there reading this now, and fill in and mail for our descriptive booklet and easy payment plan. It will cost you nothing. No trouble, just sign and mail to-night.

The Williams Piano Co.,
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THE WILLIAMS PIANO CO., Ltd., OSHAWA, ONT.
Please send me, absolutely FREE, booklet describing the Baby Player Piano advertised in Maritime Farmer.
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TIMELY SPRING TOPICS DISCUSSED

(Continued from page 597)

it is necessary to fallow the less danger there will, therefore, be from fall frosts, providing of course the seeding takes place as early as it would were the lands fallowed.

Pasturing the Fallow

Any practice that lessens the moisture or available plant food content of the fallow will lessen the vigor of growth, but increase the earliness of next year's crop. Under certain conditions it pays to produce a less rank crop and get it mature than to have a heavy, late, unripened one.

Some men let the volunteer plants grow on the fallow and pasture them off. Others sow a thin crop of oats and pasture it off, while still others sow rape in cultivated rows and pasture it off. In each case the next year's crop is invariably earlier, although not necessarily as heavy.

Tillage of Fallow

Late plowing of the fallow, late breaking and shallow plowing of the fallow are practices directly opposite to those recommended for storing and conserving moisture. For the reason that these store less moisture, the soil is warmer, and earlier, though less rank, crops are the result.

Use of Intertilled Crops or Hay Crops

Wheat matures earlier after corn or roots or well firmed potato ground than on fallow, and in the north yields as well as the fallow.

All cereals ripen earlier on well prepared breaking, whether prairie or cultivated hay land, than on fallow, and in short seasons produce a more profitable though less heavy crop.

Use of Early Classes and Early Varieties of Grain

Barley ripens in fewer days than oats, and oats in fewer days than wheat.

In each class there are early varieties. The six rowed barleys are earlier than the two-rowed. The beardless and hulless earlier, though less valuable, except for forage, than the six-rowed.

Daubeney, Sixty-day, and similar varieties are our earliest but least productive oats. Gold Rain is the heaviest yielding medium early oat we have. Victory and Banner are later, but heavier yielders.

Prelude is a very early but low producing wheat. Pioneer is not so early, but a heavier producer. Marquis is later than either, but a heavier yielder. Red Fife is the latest of all, and equal in yield to Marquis.

Winter rye generally ripens before any of the other cereals, but is occasionally caught by late spring frosts when in the bloom.

Use of Frost Resistant Crops

The perennial grasses and legumes, such as western rye grass, brome grass, and alfalfa, resist frost more than any of the cereals. The root crops resist frost in the fall, but not so well in the spring. The cereals usually recover after spring frosts, but fall frosts work serious injury on them. Corn is resistant to frost neither in the spring nor fall.

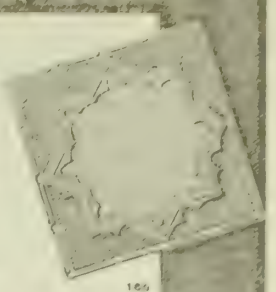
Where there is serious danger of frequent early fall frosts, as in the farthest north settlements, the more extensive use of forage crops or cereals used for forage purposes is advisable. This, of course, means mixed farming or live stock farming.—Nor'-West Farmer.

For fire-safety, inside the home use "Metallic" Ceiling Plates

YOU can make your home fireproof and more attractive at small cost by using Metallic Ceiling and Wall Plates. Many beautiful designs with cornices and mouldings for any style of room. You can put them on old walls as easily as new. Wash them or brighten up with paint whenever desired.

"Metallic" Ceiling Plates are sanitary, fireproof, inexpensive and good for a life time.

Write for booklet and prices. We manufacture all kinds of "Metallic" building materials and sell direct at lowest prices.



Metallic Roofing Co. Limited, Toronto and Winnipeg

HOW TO MAKE STARCH

This is the way to make plain boiled starch:

Allow two tablespoonfuls of starch to a gallon of water. Wet the starch with cold water until it is of the consistency of cream. Then pour over it the water, which is bubbling. Stir constantly until smooth, and boil for five minutes. Add an inch of candle—to a gallon—or a tablespoonful of lard to give a very smooth starch.

This is the foundation for all starching, excepting that done with uncooked starch.

If a very stiff starch is desired a tablespoonful of gum arabic water to a quart of starch gives good results.

To prepare gum arabic water, pour two cups of boiling water over a quarter of a pound of gum arabic. When the gum is dissolved, strain the solution into a bottle, cork, and keep on hand for use in the laundry.

Archbishop Ryan was visiting a small parish in a mining district one day for the purpose of administering confirmation, and asked one nervous little girl what matrimony was.

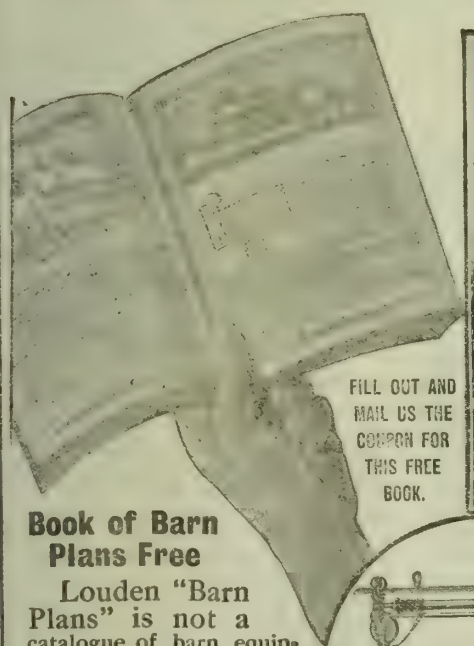
"It is a state of terrible torment, which those who enter are compelled to undergo for a time to prepare them for a brighter and better world," she said.

"No, no!" remonstrated her rector. "That isn't matrimony; that's the definition of purgatory."

"Leave her alone," said the archbishop; "maybe she is right. What do you and I know about it?"

LOUDEN BARN EQUIPMENT

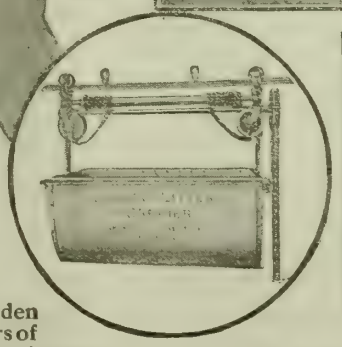
FOR QUALITY FOR SERVICE FOR SECURITY

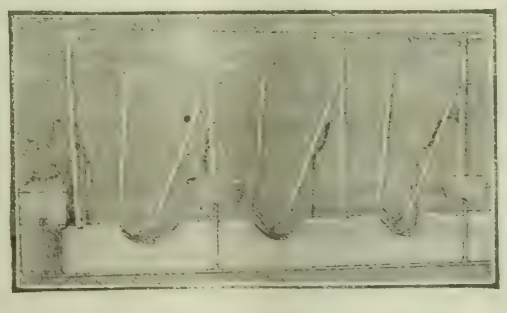


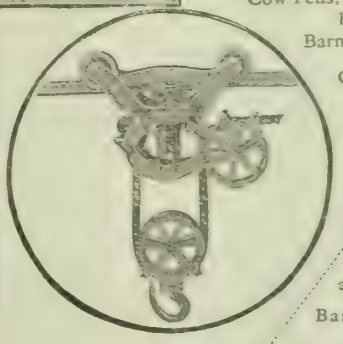
FILL OUT AND MAIL US THE COUPON FOR THIS FREE BOOK.

Book of Barn Plans Free

Louden "Barn Plans" is not a catalogue of barn equipment. It is a complete and valuable book of reference and instruction on barn construction. The 112 pages of Louden Barn plans is full of dollar saving information—the best of ideas gathered by the Louden Company during many years of barn building, and barn equipment experience. 51 representative designs for cow barns, horse barns, general purpose barns and hog houses. In addition, there are 32 pages devoted to general construction problems, such as concrete work, laying floors, roof construction, ventilation, etc.







Louden equipment makes possible a clean, sanitary barn with a minimum of expense for upkeep. When cows are transferred from dark, dirty barns to Louden barns, the milk flow often increases from 15 to 25 per cent. and the labour of caring for the herd is reduced from one-third to one-half.

The cost of of installing Louden equipment is surprisingly small, and is just as great an economy for the man with a half dozen animals as for a man with a hundred. The percentage of labour saved is the same.

The Louden Line includes:

Litter Carriers, Hay Carriers,
Feed Carriers, Cow Stalls,
Horse Stalls, Water Basins,
Cow Pens, Bull Pens,
Hog Pens,
Barn Door Hangers.

Catalogues Free

Please send me copy of Louden Barn Plans. I expect to build (or remodel) barn for .....cows and.....horses

Barn will be about x ft.

Name.....

P.O.....

Prov.....

LOUDEN MACHINERY CO.

189 CRIMEA ST., GUELPH, ONT.

VANCOUVER, B.C. WINNIPEG, MAN. ST. JOHN, N.B.

BUSINESS PRINCIPLES IN MARKETING FARM PRODUCTS

Having been both a farmer and an advertiser, and having made the combination a profitable one, the following suggestions are offered for what they are worth to those who are beginning to think of something more than makinb two blades of alfalfa grow where there was only one rag weed before, writes H. B. Trueman in the St. Paul Farmer.

Ever since Adam set the pace as a producer without a market, the farmer has been long on production and shy on salesmanship. He has become ossified, in a manner of speaking, in this attitude toward the old notion of being a tiller of the soil exclusively. He has had it dinged into him by all the powers that have tried to "uplift" him. The two-blaes-of-grass theory has been quoted by public speakers and writers ad nauseam. Especially the kind of gentlemen who generously relieve him of the care of shipping, transporting, commission merchanting, and otherwise standing—meaning, of course, the philanthropic middlemen—how they have striven to inoculate the farmer with this idea that he is a producer solely!

Now, brother farmers, I think I am well within the facts when I state that the only men who ever made a big thing of farming are the producers who were also their own middlemen. Not satisfied to close the deal at the grocery store, the elevator or the loading chutes by letting the other fellow fix the prices, they combined modern business methods with the new science of agriculture. By so doing they not only grow maximum crops, but get maximum prices for their output.

Conceding the truism that it does not pay to grow grain and hay for sale, it is evident that, if a man is farming for money instead of health, he might better feed the crude crops of the fields to live stock that will yield the highest returns. When a man has raised a bunch of choice pure breds he has got something to talk about. And that is all there is to advertising. The one who makes the most convincing talk is the one who gets the cream of the trade.

Advertising is telling the world who and where you are, and what you have for sale, and adding a dash of ginger that will make the reader want your article so much that he simply can't resist it.

Advertising is salesmanship on paper. Every sales goes through a certain routine. I mean a sale where the vendor comes out first best. It is not salesmanship when a farmer drives up to the elevator with a wagon box full of No. 1 hard, and yells "How much?" That's only filling an order if it is not absolute slavery. Scientific salesmanship is selling goods at a profit through persuasion. First you catch attention, then create interest, then induce desire, and finally persuade to the resolve to buy.

When a farmer with something special of high quality to sell can turn this trick his fortune is made. Hark, hark you! the great material prizes of the world go to the man who can persuade others to buy. A school teacher in the noblest and most responsible profession in the world gets $800 a year, while a traveling salesman with no education and less morals gets $5,000 because he can make more for the man who makes the goods.

The first thing for a farmer to do to get in this game is to produce something that people want. Next he must put it up in such attractive form that it will appeal to his customers. No use talking, folks will eat with their eyes. Offer a messy lump of butter, done up in a bit of rag; wear your overalls, and talk rough—you couldn't sell blue-ribbon butter at oleo prices. But put your A-1 butter in a clean carton holding a pound print, wrap it in a pretty, printed label, tell by type or voice how clean you keep your cows and dairy, how this butter took the first prize at the county fair, give the lady a taste on the end of a toothpick, and ask ten cents more a pound for it than she pays for oridnary creamery butter—and it's a ten-to-one shot that you will have to buy more cows before long.

A salesman or advertiser has got to put a big chunk of psychology into his work, which is no more nor less than understanding the human heart and telling the truth in an interesting way.

I am not trying here to write a complete compendium on scientific advertising, but only to hint at some of its possibilities. There isn't a farmer in the land, no matter how peculiarly situated, nor what manner of stuff he raises, but can improve his financial status by employing business system along with his scientific production.

The writer spent a goodly number of years as a dairyman near a large city. Wholesale returns being considered inadequate for his ideals of decent living, a wagon route was started and a sanitary bottling plant installed. We had choice milk. That was the foundation. No use advertising or boosting an article without superior merit. We told people about our specialty. Folks with babies and puny children, sick folks and old people, discriminating judges of good milk, and others were glad to pay us ten cents a quart for our bottled sunshine-and-clover, where our competitors were getting an average of six cents a quart.

Another time we had some superior oats. They were too good for feed, and we put a little advertisement in several papers read by farmers. Instead of selling on the open market juggled by those sacred "quotations," we got a dollar a bushel for our good seed. They were worth the money. The oats were heavy, plump, virile, free from weed seed, and carefully claned and graded. We shipped at buyer's expense for freight, but furnished the bags.

A neighbor had a fine crop of onions. He put up a unique sign at the front gate offering them for sale at retail prices, and folks came to his door, paid cash, took their purchases away, and were glad to get the extra fine article.

Another friend living near a lively factory town made money selling weanling pigs at five dollars apiece. Almost every family in the suburbs wanted a "swate bit of a pig" to bring up by hand in a pen, to eat table and garden scraps, and grow into a 300-pound porker for family use.

Another dairyman who made butter heard of Prof. Metchnikoff, successor of the great Pasteur, and his Bulgarian soured milk that makes you live to be a hundred. He procured some of the dope and learned how to make this new brand of "buttermilk." It sold at fancy prices at drug stores, hotels, and at private residences. What formerly had been fed to the hogs at a value of about a cent a gallon was converted by brains and skill into a highly desired article of human food, and brought from twenty to forty cents a gallon.

The parcel post and the corresponding low express rates offer opportunities to farmers living within 150 miles of a city to build up a profitable trade in certain products direct with the consumer. A favorite way in some localities is to hunt up by advertising or personal solicitation a set of good paying customers who think first of quality and second of price, and ship a weekly hamper of eggs, dressed poultry, butter, cottage cheese, fresh or cured meats, vegetables, fruit, flowers—in fact, anything a farmer uses on his table, and all packed according to the needs or whims of the customer.

The empty hamper—made of willow—comes back at slight cost.

There is no limit to the things a farmer's family can do in the way of producing something else besides corn, timothy hay, and fat stock for the "quotation" markets. It takes a little imagination and some nerve to get it started; it requires some brains and commercial ability to keep it going. The prospect for making the farm pay commensurate returns with industry and ability is an attractive one to the man or woman of ambition and enterprise.

But before attempting anything of this sort, the reader should get this everlastingly fixed in his mind:

QUALITY BEFORE QUANTITY.

FORGIVENESS OF NATURE

The Farm Lawn—How to Plant and Maintain It

A well-sodded lawn is the first attribute of pleasant surroundings for a farm home or any other home. Care and work and intelligent attention will insure a successful lawn in exactly the ame proportion that a farm crop can be grown on that farm or under similar conditions. The man who wants a farm home with comfortable and pleasant surroundings for his family instead of merely a place in which to exist will find that results amply repay the effort and expense in securing and maintaining a sodded area of grass surrounding his house. A well-kept lawn is a thing of beauty, is restful, and is useful.

Blue Grass Makes the Best Lawn

The manner of planning a lawn and the kind of grass to be used must be determined by conditions and the section of the country. Blue grass is by all odds the greatest lawn grass in America. In all the states north of the latitude of central Tennessee, with the possible exception of some parts

For heavy tangled fields trust your

Frost & Wood Binder

Many binders will cut grain that is standing nice and clean but for tangled, heavy, rough-and-tumble cutting you certainly need the strength and light draft of the Frost & Wood Binder.

Bear in mind that the crop you lose through bad cutting may well represent your net profit. Most of the crop goes to pay expenses—it's the last few bushels that represent your PROFIT. You can't afford to lose a head of grain.

The Frost & Wood Binder is built of the toughest, strongest, yet lightest materials that money can buy. We use wonderful, dust-proof, roller-bearings at every friction point, which makes long life and easy work. The elevtion is worked out on new lines, it can handle any crop, no matter how choked or heavy.

Handy levers work the reel to any position and bring the grain to the cutters no matter how tangled or short it is. The Frost & Wood Knotter is very simple, and get-at-able. Needs no adjusting and it won't fail you.

The sheaf compressor and ejector is worked by a smooth-running eccentric sprocket that does its work without jerking or strain. Hardly know it is at work—easy on the binder and the horses!

Big power wheel, strong bracing, improved cutter bar construction and many other good features. You ought to have our new catalogue at once and make a careful study of the Frost & Wood Binder. Don't take chances with your crop. See our nearest dealer at once or write us today for catalogues.

THE FROST & WOOD CO., LIMITED

MONTREAL, SMITH'S FALLS, ST. JOHN

There is more or less work

Every furnace demands *some* attention. But there is no reason why the twice-a-day job should be anything but pleasant. And to save *little* time and a little bother every day means a lot in the course of the winter.

The Sunshine is a Furnace any one can look after without spoiling either clothes or temper

The door is large enough for the biggest coal shovel. The grates are strong and turn easily. The ash-pan catches all the ashes without the need of shovelling. The water-pan is located so that it can be filled quickly.

Ash-dust cannot escape when the Sunshine is being shaken down. None of that light dust floats about the house or the basement.

The damper and the check draft can be regulated from upstairs—and perfectly, too. The close-fitting doors and dampers hold the fire for hours without waste.

McClary's Sunshine Furnace

Do you know how little it will cost you to enjoy the comforts of a fine Heating System in your home? Send the coupon for a copy of our booklet "Sunshine." And if you wish to have prices of installing a Sunshine Furnace, let our Heating Engineer send you the information. Tell him the kind of a house you have and the number of rooms; give him a rough ground plan of the upstairs and downstairs, and he will show you how to plan your heat distribution so as to get the utmost out of it. There is no charge for the service; it is free whether you buy a Sunshine Furnace or not.

Kindly send me without expense on my part:—

1. Your booklet on the Sunshine Furnace.

2. Also forms for filling out, so that your heating engineers can tell me how to order and install a system that will properly heat my home.

Name .....

Address .....

.....

McClary's

London Toronto Montreal Winnipeg
Vancouver St. John, N. B. Hamilton
Calgary Saskatoon Edmonton

of the extreme northern tier, blue grass is the king of lawn grasses. In the extreme south Bermuda grass is best. White clover is the most popular plant to sow with blue grass, and the two make an ideal combination. Next to blue grass probably come the Rhode Island bent grass and red top. The ideal lawn soil is moderately moist and contains considerable clay. This does not mean that a lawn cannot be made on loose, sandy soil, but it will take more work and expense. Sometimes it is practicable to place 3 or 4 inches of clay on top of light, sandy soil, and then mix the two to a depth of about 6 inches in preparing the seed bed for a lawn. Remember, that since a lawn is to be a thing of permanency, and also because the area involved is small, it justifies an unusual outlay both of labor and money in case special treatment is needed.

The best landscape effect is obtained from a convex surface, that is, a sloping or slightly rolling lawn is to be preferred. Plant your trees and shrubbery so as to give the effect of big, open spaces. If your soil is clay or sand loam on a clay subsoil you have the ideal foundation. This will give you fertility and is retentive of moisture. Don't, of course, make the mistake of trying to plant a lawn on wet land. You want the plot well drained, but the nature of the soil retentive.

Put a lot of work on soil preparation. The actual seed bed need not be over an inch deep, but there should be 8 to 10 inches of good rich soil underneath. This should have been spaded up or plowed, worked up carefully, fertilized, and packed. Remember that your lawn may be there for many years, and that the grass must have a big area of fertility from which to draw if it is to last. There is no danger of making your lawn soil too rich. Plow it up 8 or 10 inches deep, work is over carefully, and put on well-rotted manure at the rate of 50 to 60 loads to the acre, working this in thoroughly. Put on 1000 pounds or more ground limestone to the acre, and 500 pounds or more finely ground bone meal. Just before seeding work in high-grade fertilizer at the rate of 300 to 500 pound to the acre. Have this consist of about 3 per cent nitrogen, 8 per cent potash, and 8 per cent phosphoric acid.

Before putting on the complete fertilizer cultivate the soil for quite a while. Go over it frequently, break it up, and kill all the weeds that appear. Cultivate it, roll it, and then rake it so as to form the seed bed on the surface.

Experience is divided as to spring or fall for sowing blue grass and white clover. Spring sowing, generally speaking, is to be commended where it can be sown early enough that it will get a good start before the days become extremely hot. Blue grass germinates at comparatively low temperature and the hot sun is hard on the young plants. If you don't get it seeded in the spring, cultivate the ground all summer and sow in early September. Some means for sprinkling the ground and keeping sprouting seed well moistened should be provided. Seed sown just before a gentle shower often gives splendid results.

Sow Plenty of Good Seed

Sow blue grass alone at the rate of two bushels an acre. Most people want some white clover in the lawn, however, and in case you use this put in a peck of white clover seed and one bushel three pecks of blue grass, or use it in the proportion of that amount per acre. Remember that these seeds are very small, and that they must be in close contact with the soil particles in order to sprout well. Therefore have your seed bed fine and moist.

Of equal, or perhaps greater, importance than soil preparation is seed selection. The best seed is none too good for your lawn. Be sure that it is pure—that is, not mixed with other varieties, and free of weed seed. If you have any doubt, send a sample to your experiment station and doubtless they will test it for you. You had better pay the price for cleaned blue grass. This high-grade product weighs 22 pounds to the bushel, while the average seed weighs nearer 12. Better sow too much seed than too little.

Use the Roller and Lawn Mower

Clip the grass when it is 3 inches high. Usually on a new lawn it will pay to use a roller before this first clipping or immediately after. This eliminates irregularities of surface which it will be almost impossible to do after the grass becomes thoroughly established. The roller is a very essential implement in making and main-

(Continued on page 622)

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BEE ! BEES !

We offer for sale several colonies of Bees in first-class condition and warranted free from disease.

CRAIG BROS.

Amherst Nova Scotia

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by beekeepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.
E. L. Colpitts, Petitcodiac, N.B.

FOR SALE

TURKEYS EGGS—$3.00 for 11. Butter cups $2.00 for 15. Blue Orpingtons, fine English stock $3.00 for 15. Blue Orpington Cockerl very choice bird $3.00

Fine Guernsey bull one year old, from a cow giving a pail of milk, well grown animal in fine condition $75

SARAH E. MOSES SMITH
Woodwards Cove, N. B.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Pure bred Yorkshire Pigs, price $8.00 each.—FISKE BROS., Florenceville, N. B.

FOR SALE—Two registered Ayrshire Bulls.—L. HERRIDGE, Hoyt, N B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

FOR SALE.—Four young heavy horses.—ROBERT J. STEWART, Cole's Island, Queens Co., N. B.

FOR SALE.—Eight six-month-old best registered Ayrshire and Holstein Bulls, $50.00 each.—E. M. WHEATON, Putnam, Conn.

WANTED.—An experi nced herdsman to take charge of a herd of Holsteins. Apply, stating wages, &c, D. R. NICHOLSON, Coxheath. N. S.

WANTED TO PURCHASE—Two Registered Yorkshire Sows of the very best breeding. Communicate, stating price and age, with F. W. SUMNER, Moncton, N. B.

EGGS FOR HATCHING.—Pure bred Rose Comb Rhode I land Reds. Good winter layers. $1.00 per 15.—MRS. B. H. SMITH, Yo ng's Cove Road, N. B.

EGGS FOR HATCHING AND BABY CHICKS from Imported Heavy Laying Strain of Barred Plymouth Rocks and White Leghorns. $1.00 per setting—J. H. PRINCHARD, Summerside, P.E.I.

PURE BRED HOLSTEINS FOR SALE.—One Bull, 17 mon hs old; one Bull Ca f, 4 months old; one Heifer Calf, two weeks old; of excellent breeding on both sides. For particulars write ROBERT C. HICKS, West Bathurst, N. B.

BOYS AND GIRLS MAKE $1.00 selling 25 packages Empire Court Plaster. Three colors. Antiseptic. Sells quick at 10c each. Order now. Send no mo ey until sold.—VINCENT DAVIS, Box C, Beebe, Que.

LADIES WANTED to do plain and light sewing at home, whole or spare time; good pay; work sent any distance; charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

THE CELEBRATED BEST OF ALL SCOTCH TURNIP SEED also a full line of pure Field and Garden Seeds. Mail orders rec ive special attention.—DUNLAP BROS. & CO., LIMITED, Amherst, N. S.

BANTAMS.—Our full stock of Bantams and Pigeons for sale, including all our prize winners at Halifax, Amherst and Charlottetown. All first class stock. Write for prices on your choice varieties.—SPRING PARK POULTRY YARDS, Charlottetown, P E. I.

FOR SALE.—Bronze Turkey Eggs from large hens, headed by 40 lb. gobbler, $4.00 dozen; B.P. Rock Eggs, $1 50 for 13; W. Leghorn Eggs, $1 50 for 13; White Wyandotte Eggs, $2 00 for 13; Guinea Eggs, (Pearl) $1.00 for 9. Belgian Hares and Flemish Giant Rabbits, $1.00 each and upwards. No orders filled parcel post.—HOTEL DIEU FARM, Chatham, N. B.

GET YOUR NEW SUIT FROM CATESBYS, LONDON, ENGLAND, for half what you pay local tailor. Best materials, style, fit guaranteed or money back. Write for free catalogue, self measurement form and patterns. Address CATESBYS LIMITED, Canadian Office, 119 Wellington S. West, Toronto. Mention "Maritime Farmer."

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2 00 per 15.

PEN NO. 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eye, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm," Oxford Junct., N.S.

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S

BULL'S CREEK FARM

R. O. M. HOLSTEINS

All Bull and Heifer Calves advertised in previous issues sold. Present offering three good R O M. Cows now milking. If desired will be bred to my herd sire, (son of Woodcrest Sir Clyde the $2000 Bull.) Also a Yearling Heifer already bred

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

HOW TO PRODUCE CREAM THAT MAKES GOOD BUTTER

(Continued from page 593)

makes difficult accurate sampling and testing. It is undesirable, further, because it diminishes the amount of skim milk available for the feeding of calves and pigs; in increases the cost of transportation for every pound of butter fat shipped; it makes impracticable the use of a reasonable amount of starter in the creamery, and starter is essential for the production of the best quality of butter; it does not churn out exhaustively and yields an excessive amount of buttermilk, augmenting the loss of fat, and thereby reducing the churn yield.

There are no advantages in producing a cream testing higher than 45 per cent. Too rich cream is undesirable because it tends to clog the separator; it increases the loss in handling due to sticking to the receptacles; it makes difficult accurate sampling, and thereby tends to yield incorrect tests.

It is desirable to produce somewhat rich cream in summer than in winter to prevent excessive souring in summer and difficult handling in winter.

Protection of Cream in Transit

The cream should be kept in the cooling tank until it leaves the farm. While being hauled on the wagon and waiting for the train at the station, it should be properly protected against heat in summer and cold in winter. This can be done by using a covered wagon for hauling, or by hauling the cream in insulated cans, or by slipping a jacket over the cans, or by covering the cans with a wet blanket in summer and a dry blanket in winter.

If the cans arrive at the station long before train time, as is often the case, a cooling tank filled with water and located in the shade, should be provided so that the cream is reasonably protected against the hot summer weather.

Sour Cream Tests No Higher Than Sweet Cream

The impression among many cream producers appears to be that sour cream contains more butter fat and yields a higher test than sweet cream. For this reason some farmers purposely keep their cream until it sours, and often store it in a warm place to hasten the souring. This impression is entirely erroneous. The acidity or sweetness of cream has no effect on its fat content, nor on the resulting test.

On the other hand, this practice of causing the cream to become extremely sour spoils its chances to make good butter and renders difficult the taking of a representative sample, and thereby lessens the reliability of the test, for the accuracy of the test depends above all things on the accuracy of the sample.

Reputation and Financial Returns

Every cream producer should take pride in delivering cream of the proper richness, that is smooth and uniform in body, sweet or only slightly sour, and that has a good clean taste. This is possible without unreasonable labor or expense; it can be accomplished on every dairy farm by properly adjusting the cream screw, thoroughly washing the separator after each separation, cooling the cream promptly, and keeping it cool by setting the cans in cold water, keeping the warm cream in a separate can until it is cooled, and by making from two to three deliveries every week.

As long as our creameries receive inferior cream they are unable to secure top prices for their butter, and can pay only second grade prices for butter fat. Good cream will enable them to build up a reputation for good butter, which means increased demand, higher prices, and larger returns to the cream producer.—Bulletin by O. F. Hunziker and G. L. Ogle, Purdue University, Lafayette, Ind.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

FOR SALE !

One Registered Bull, "Coverdale Major", No. 98355. Colored with a little white. Calved Jan. 17th, 1915. This is a splendid young bull. Price $125.00.

Also "Perfection", No. 102297. Calved October 3rd, 1915. Bred by F R. Cromwell, Cookshire, Q e. Price $175.00.

These animals are both bred in the purple.

Full particulars of pedigrees given on application. Both are very superior animals. Apply to

F. W. SUMNER, Moncton, N. B.

COSSAR STOCK FARM, Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. J. MEIKLEJOHN. Agent.

Elmhurst Stock Farm!

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

SHORTHORN CATTLE

Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

Guernseys!

For Sale—Registered stock. Male or female.

T. D. BLAIKIE
Great Village, N.S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires

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Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

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Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

Single Comb R. I. Reds.
Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

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Our present offering includes:—1 bull 20 months old, 1 bull 8 months old, several females, all ages and some grand high grade cows fresh in milk.

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Strawberries.—Senator Dunlap, $3.50 per 1,000; other choice varieties, 85c per 100; mail postpaid.

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Barred Plymouth Rocks, White Wyandottes and S. C. White Leghorns. Price $1.00 per 15.

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We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

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ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

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Maple Forest Yorkshires

We have the type that gives best profit. Write your wants to

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Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

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AYRSHIRE BULL FOR SALE!

I have sold all my Bulls but one. He is 10 months old and an extra fine individual—is well built and growthy and now weighs 650 lbs. Is mostly white with few dark brown spots. His dam made in R. O. P. test as 3 years old 7492 lbs. milk and 306 lbs. butter fat. Also in R. O. P. test as 4 years old made 8917 lbs. milk and 356 lbs. butter fat. His sire's dam made 1318 lbs. milk and 530 lbs. butter fat in R. O. P. test in 12 mos. and in 15 mos. made 15159 lbs. milk. This bull is sure to make a good show animal, is in fine condition and has just passed the Tuberclin test O. K

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Eggs $2.50 per 15.

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Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

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FOR SALE!

Grey Percheron Mare, rising nine, weight about 1200. Good farm and general purpose horse.

F. G. CLENNETT,
Watauga, Pictou Co., N. S.

FORGIVENESS OF NATURE

(Continued from page 619)

taining good sod. The old English saying that a good turf is secured by sowing seed and then rolling the land every year thereafter for 300 years contains a good deal of true philosophy. Keep the dandelions cut out, and never let the lawn grass grow seed.

Top dress the lawn at the beginning of each winter with well-rotted manure. The winter's snows will take the fertility down to the grass roots, and the coating will protect the grass from winter killing and blowing. Early in the spring rake off what is left, and then use the roller again, this time to settle the grass roots that may have been dislodged by heaving in the freezing and thawing of the soil.

INFLUENCE OF HEATING MILK ON THE NATURAL SEPARATION OF CREAM

Five different series of experiments were carried out to determine the influence of heating milk on the rapidity of the natural separation of cream from milk. The results of these experiments are collected in several tables, and may be summarized as follows:

1. Of the changes produced in milk on heating to temperatures below boiling point, those which exert an influence on the separation of the cream demand particular attention since they show considerable and easily measured variations for small differences of temperature.

2. These variations may be observed already at temperatures much below the coagulating point of the protein; for instance, heating for 30 minutes at 55 degrees C., and may result in an acceleration or retardation of the separation of the cream, according to the particular temperature.

3. Acceleration is distinct at 55 degrees V. and increases with the temperature to a maximum of about 61 degrees C., after which is diminishes, and between 63 and 64 degrees C., and probably a little below the latter temperature, it changes rapidly, and a retardation begins. This temperature can therefore be regarded as the critical temperature for the action of heat on the separation of cream. Heating to 65 degrees for 30 minutes causes a very remarkable retardation in the separation of cream compared with that of raw milk.

The writer points out the desirability from both a practical and theoretical standpoint of an extension of the researches, in view of the extreme sensitiveness to heat of certain constituents of the milk, so as to obtain information for estimating at their just value the changes produced in milk by any heating process.

By means of a more complete knowledge of this critical temperature it will perhaps be possible to find before long a definite solution on scientific grounds of the question of the best temperature for pasteurization. Certainly the determination of the rapidity of the natural separation of cream combined with the bacteriological analysis of heated milk will be of the greatest value in examining the various processes for the pasteurization of milk.

DISKING IMPORTANT PART OF SPRING PREPARATION

In the management of land for spring plowing, disking plays a most important part. When land has stubble on it, disking breaks up the stubble into small pieces so that when it is plowed under a more uniform distribution of the organic matter is assured and the danger of retarding the upward movement of water is greatly reduced. Furthermore, the stubble or organic matter will decompose much more rapidly.

When manure has been applied to the soil in the nature of a surface dressing, disking will incorporate it much more evenly in the soil, and reduce the harmful effects of excessive fermentation which is closely associated with incorporation in the form of layers, as is the common occurrence when the manure is simply plowed under. Disking also prevents drying out of the soil as the capillary water will have free access to the surface layer.

Soil that is dry, if disked before plowing, will make a much better seed bed, as clots will be less liable to form and the seed bed will be more mellow, more compact, and the surface would be less subject to excessive evaporation.

When spring plowing is delayed, disking the soil in the early spring prevents excessive evaporation as the operation mulches the soil. Should rain come during the early spring time, the disked soil will be in good condition to absorb the moisture.

Root crops that are to be planted on spring-plowed land will do much better if the land has been disked previous to plowing, as a more friable condition of the seed bed is obtained, the moisture content may be greater, and a greater amount of available food material may be present.

TILE DRAIN CHEAPER THAN OPEN DRAIN

Many farmers are laboring under the mistaken notion that a closed drain is much more expensive than an open drain, and are therefore wasting money in the construction of many small open drains. The fact of the matter is that in the majority of cases, especially where tile less than one foot in diameter is required, the closed drain is the cheaper. The slope of the banks of an open drain should not be less than 1 to 1, and the drain should in most cases, for irrigated lands, be at least 4½ or 5 feet deep. Figuring an open drain of this size and comparing the cost of the same with a ten inch tile drain, we find that they are just about equal.

The cost of the construction, however, is not the only thing to be taken into consideration, but the maintenance of the system is also of great importance. In the case of the open drain we have conditions exactly right for the rank growth of vegetation, and the open drain continually needs attention. The cost of maintenance therefore is high. The closed tile drain, on the other hand, if properly installed, requires very little attention as far as maintenance is concerned, and in the end is cheaper than the open drain.

Open drains have their place, and serve their purpose well when properly used, but they should be constructed for outlets of larger drain systems where tile would be out of the question on account of the large size necessary. They are, however, entirely out of place when constructed as lateral drains for individual farms.

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We would be glad to correspond with dealers with I. C. R. rail connection who would like a regular supply of fresh strawberries direct from the farm during the Nova Scotia season.

CYRUS & MANNING ELLIS
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Three young bulls from R. O. P. dams with splendid records. We are so confident that these bulls will give satisfaction that we guarantee to refund the money and pay charges both ways if the purchaser is not satisfied. Order one. You run no risk whatever.

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Quebec and Winnipeg.

A New and Vast Portion of Canada in the Making to be Seen While Travelling in Modern Railway Comfort.

A new chapter in the railway history of Canada, and in fact of North America, will be written with the inauguration of the new express service between Quebec and Winnipeg by the Canadian Government Railways.

More fitting names could hardly have been selected for the two expresses—the "Western-National" and the "National-Atlantic." The mere mention of such a service in normal times would have attracted "national" attention—for the opening of a direct railway route with a through sleeping car service, a route independent of junction or terminal changes, under Government ownership and management, and making a new link between the Atlantic and the Pacific, is surely of "national" import.

Commencing June 13th, the "Western-National" will leave Quebec at 2.00 p.m. Tuesday, Thursday, Saturday, arrive Cochrane, Ont., 4.10 p.m. Wednesday, Friday, Sunday, there connecting with the "National" from Toronto, and arrive Winnipeg 4.30 p.m. Thursday, Saturday and Monday. On the eastern trip the through sleeping car will leave Winnipeg 5.15 p.m. Sunday, Tuesday, Thursday, arrive Cochrane 6.55 p.m. Monday, Wednesday, Friday, and the "National-Atlantic" will leave Cochrane 7.15 p.m. Monday, Wednesday, Friday, arriving Quebec 9.10 p.m. Tuesday, Thursday, Saturday. This is 49 hours of travel, and the quickest time between the two cities. Observation sleeping cars will be operated, thus giving an opportunity of seeing a new portion of Canada in the making while travelling in moder railway comfort

The "National" traveller will note the hardy pioneer has not only blazed the trail, but has commenced settlement, for here and there along this—the most northerly of the eight Transcontinental routes—are already flourishing farming areas. He will see development in the lumber and pulp industry, and the vast possibilities for extension in those directions. He will stop at La Tuque (population over 4,000) and Cochrane (population over 2,000), modern towns, with schools, churches, hospital, electric light, built on lands which only a few years ago were in the heart of an unknown wilderness. Other towns in the making and town sites will be observed. He will cross noble rivers and ride in view of immense inland waters. The opening of such a territory will naturally suggest untold possibilities for the prospector, hunter, trapper, and angler—and these possibilities are so varied and extensive as to be beyond human calculation. Already there are competent guides who make it a business to conduct hunting and fishing parties to selected camps, while organized canoe trips on the network of rivers, and even to the shores of Hudson Bay, can be arranged. Evidences of the great world war will be seen in the Detention Camps at Spirit Lake and Kapuskasing, where foreign aliens are interned. The "National" traveller will pass through the Great Clay Belt for over 400 miles, an area of 16,000,000 acres of level or undulating land destined to be the future home of thousands of settlers. He will cross New Ontario, 330,000 square miles, fully four times the size of Old Ontario, into Manitoba, and reach Winnipeg over a section of the great wheat area of that fertile province. And all the time he will be on a railway on which no expense has been spared in making it what modern engineering science demands in an up-to-date railway.

Mention has been made that the railway from Quebec to Winnipeg is a link between the Atlantic and the Pacific. The Government Railways (The Intercolonial) from the Atlantic seaports, Halifax, Sydney, St. John, connect at Quebec from Levis by the car ferry S.S. "Leonard" until such time as the Quebec Bridge is completed. At Winnipeg the Grand Trunk Pacific, using the same Union Station, permits of direct connection with its lines for the Northwest and Prince Rupert on the Pacific coast, thus forming new transcontinental route from coast to coast—a route that will be the potential transportation factor in the development of Canada's new and vast areas.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, JULY 11, 1916. Number 19.

Control Potato Diseases by Practical Science.

To secure the best results in potato growing, the farmer is up against a fight of no mean order. He has to handle a variety of farm plant that is so highly civilized by the association and requirements of humanity that it is totally unfit to fight for itself in the race struggle. The "survival of the fittest" is apparently the law in nature, irrespective of the needs of the human family, and the potato in its natural habitat, revelled in a climate and atmosphere where its civilized enemies could not exist. Bearing these facts in mind, the farmer who wishes to succeed in growing the abundant crop must cultivate a sort of social interest in the plant and its surroundings, entrenching himself in all the known methods of war, scientific and otherwise, that up to the present is known to disease resisting militarism.

There are areas in Canada where potato diseases and pests are unknown, where the production is simply a process of planting and digging; but in some sections if such a step was taken potatoes would quickly retreat from the rural industry of these provinces. In order that it may be kept in a trained condition for the fight, the potato vine must be kept intact and in healthy condition from the first day it rears its head from between the clods of earth till the day that it fades in a ripened green old age in the early fall. Not only has the farmer to fight against the enemies of his own potato plot or field, but he has to contend with the plot of his careless neighbor, whose tactics of war are in favor of the enemy—a sort of anti-potato ammunition depot and factory, a neutral base where bugs, blights, and all the hosts of potato destruction are propagated and bred.

Keep Vines Green

It is of the utmost importance to the crop that the vines and foliage be kept green and growing even till late in September. The keeping of the potato tops green for such a lengthened period is not fully realized by the average farmer as of much importance in the ultimate success of the crop. No more striking proof is afforded of the importance of keeping the potato tops green and the plants growing well into the month of September than the results obtained by Prof. L. R. Jones, of the Vermont Agricultural Experiment Station, by digging potatoes at different dates and estimating the yield per acre. It is a simple experiment, and one which every farmer should try for himself. The following table shows the results:

Date of Digging	Total Yield per Acre. Bushels.	Field of marketable size. Bushels.	Average size of Tubers. Ounces.
August 2	58	30	1.6
August 12	115	75	2
August 22	230	163	3.7
September 1	304	234	4.4
September 12	356	303	5.2
September 22	379	353	5.7

From the above we find that 119 bushels of marketable potatoes developed during the month of September. In the Maritime Provinces many fields of potatoes are dry and brown by September, either through lack of cultivation or from disease. Not only is the yield of potatoes much increased by keeping the vines green well into September, but the quality of the potatoes is much improved. In previous articles it has been shown how a vigorous growth can be maintained in the early part of the season by cultivation, and now we wish to discuss how the tops may be kept green during the latter part of the season by a warfare on insects and diseases.

The first fellow to make its appearance on active duty is the Colorado Beetle. It is an insect so well known that its description here is unnecessary. Those that are hatched late in the fall hibernate during winter and emerge in the spring time on the outlook for potato tops. Their desire to find a potato plant is not so much for food to themselves, but for a nursery for their youngsters. The old bugs do not do much harm to the foliage themselves, but they lay their yellow clusters of eggs on the under side of the leaves, and in about a week the young larvae appear, and it is at this stage that destructive damage is done to the crop. Fortunately there are good remedies for this pest in paris green and arsenate of lead, but if the farmer waits till the foliage is well eaten before he commences spraying, his crop results will be poor. The longer the spraying is delayed the poorer the crop results will be. Unfortunately on perhaps the majority of farms nothing is done to destroy the potato beetles until the foliage is noticed partly eaten. Potato growers should not wait until the vines are injured, but should anticipate the arrival of larvae from the eggs of the mother bug, and apply a good insecticide.

What to Use

It is important to have a quick death-dealing article, and also one that will adhere to the foliage. Paris green and arsenate of lead are two of the best poisons to use. Arsenate of lead in the proportion of two to three pounds to forty gallons of water adheres better to the foliage than paris green and is a good poison to use. It does not appear to kill so quickly as paris green and a mixture is suggested of 8 ounces paris green and 1½ pounds of arsenate of lead to forty gallons of water, make the mixture into a paste, and there will not be so much waste by precipitation to the bottom of the barrel, and the mixture will mix better with the water.

Over the question of wet or dry applications of the insecticides there is not a concensus of opinion. The dry mixture should be applied when the vines are wet, so that it will adhere. If paris green is to be applied dry it should be done by mixing 1 pound of green to 50 pounds of slacked lime or any dry powder. If the dry mixture is put on when the foliage is wet it will adhere better than the wet mixture, and will also be more evenly distributed. If the beetle has started operations, do not wait for the favorable moist day to give the dry dressing, but start right away with the wet dressing, which can be done almost any day that outdoor work can be undertaken.

Whatever be the method chosen, spraying must be done thoroughly. All plants and all parts thereof must be well covered. A plant with one half sprayed and the other half missed will have the unsprayed part eaten off by beetles very quickly. This will leave enough beetles to continue the pest. One spray thoroughly well done is better than several carelessly applied.

How Blight Appears

Other diseases which follow in the wake of the potato bugs are blights of which there are two varieties, known as Early Blight and Late Blight. Early Blight does not cause the rotting of tubers like Late Blight, its destructive influence being seen in the lessened yield and checked vigor of the crop. This disease appears in round spots, irregularly placed over the leaves. They usually begin to appear early in July. The disease spreads by means of spores which permeate the tissues of the plant and can be carried over the winter by the dead stalks. It is almost impossible to do anything as a remedy after it has started, but the application of Bordeaux mixture in time acts as a preventative, and the foliage ought to be kept covered with Bordeaux mixture from the middle of July till the end of the season. It is a good plan to burn all stems after digging.

Although a good deal of harm is done to the potato crop by the Early Blight, it does not nearly compare with the ravages done by the Late Blight. During the month of July or early in August this disease appears on the under sides of the leaves with a hoar frost like appearance. It makes rapid progress, soon covering the field with large patches of brown decaying foliage. The strong, disagreeable odor from a potato field affected with this disease is familiar to all, and at this stage the crop will be benefited by a spraying of Bordeaux mixture.

There are only a very few Canadian farmers who spray for the prevention of Late Blight, and the loss sustained by this inconsideration is very great. At the Central Experimental Farm, Ottawa, this disease has received much attention, because of the importance of the potato crop in Canada. Some years ago circulars were sent out to all the leading newspapers, giving the results of their experiments at the Central Farm, with instructions as to the life history of the disease, the damage it did, and how to prevent it. Yet today we have to report that few, if any, farmers make any special effort to stamp out the disease from Canada. In the following table will be found the results of spraying with Bordeaux mixture as a preventative in the years 1901, 1902, 1904. In 1903 the potato plants were uneven through protracted drought, and the results were made of no value.

1901—Average yield per acre of marketable potatoes, sprayed 4 times: Sprayed, 333 bushels; unsprayed, 233 bushels. Average increase in marketable potatoes per acre by spraying, 100 bushels.

1902—Average yield per acre of marketable potatoes, sprayed 4 times: Sprayed, 310 bushels; unsprayed, 189 bushels. Average increase in marketable potatoes per acre by spraying, 120 bushels.

1904—Yield of marketable potatoes, sprayed 5 times: Sprayed, 369 bushels; unsprayed, 306 bushels. Average increase in marketable potatoes per acre by spraying, 62 bushels.

Average yield per acre of marketable potatoes, 3 years sprayed and 3 years unsprayed: Sprayed, 337 bushels; unsprayed, 243 bushels. Average increase in marketable potatoes per acre by spraying, 94 bushels.

These figures speak for themselves and it is unnecessary to enforce further arguments pointing out the necessity of more active operations on the farm field in the prevention of this disease. For Early and Late Blight the formula recommended is:

Copper sulphate (bluestone), 6 lbs.
Unslacked lime, 4 lbs.
Water, 40 gallons (1 barrel).

Dissolve the copper sulphate by suspending it in a barrel containing four or five gallons of water. It will dissolve quicker in warm water than in could. Slake the lime in another vessel and strain it through a coarse bag or fine sieve. Then half fill the barrel with water which contains the copper sulphate, then add the slaked lime, and fill the barrel to the content of 40 gallons. A stock solution of copper sulphate and lime wash may be prepared

(Continued on page 646)

Cabbage Root Maggot and Its Control in Canada

(Phorbiabrassicae Bouehe)

By Arthur Gibson, Chief Assistant Entomologist, and R. C. Treherne, Field Officer.

(Continued from last issue)

Habits

Food Plants.—The Cabbage Root Maggot, practically speaking, confines its attacks to plants of the Mustard Family or Cruciferae, such as cabbage, cauliflower, radish, turnip, and rape. In addition, however, to these crops the insect is recorded by Chittenden as being injurious to celery; and Slingerland records the feeding of the larvae on the roots of Common Winter Cress (Barbarea vulgaris) and Hedge Mustard (Sisymbrium officinale), both of which are wild plants belonging to the Cruciferae, or Mustard family. Lintner records the larvae as mining in the leaves of beets.

In addition to the above we have one new food plant to record and also to confirm Lintner's observation of the maggot attacking the beet. The injury to beets, however, was not to the leaves, as already recorded, but the maggot was found working in the roots. In 1910, when there was a serious outbreak of the Cabbage Root Maggot in British Columbia, Mr. Tom Wilson, an officer of the Branch, sent to us at Ottawa larvae which were found by him working in beans in that province, and from these we reared adults which emerged between the period July 12 and July 28. On June 16 of the same year we also received from Mr. Wilson roots of beet which he gathered near Duncan, B. C., and which were heavily infested by the maggot. From this latter material we reared adult flies in June and July. The flies from the beans and also those from beet were recently determined by Dr. J. M. Aldrich as Phorbia brassicae Bouche. The occurrence of the Cabbage Root Maggot in beans and beets is most interesting, but as these are the only instances known to us of this maggot attacking these crops in Canada, it would seem that this feeding habit of the maggot is unusual.

Nature of Injuries

The only stage in the life history of the insect which is injurious to plants is the larval or maggot stage. Injury by the Cabbage Root Maggot is largely confined to the roots of the plants it attacks, although occasionally the maggot will bore into the stem above the ground and also into the mid ribs or fleshy leaf stalks of such plants as cabbages and cauliflowers, and it has even been recorded as mining in the leaves of beets. In mid summer we have also observed at Ottawa, Ont., conspicuous injury by the larvae in the stems of the heads of cauliflowers. On July 22, 1912, many of the maggots were removed from a head and a photograph taken. From our observation it would seem that only the heads of those plants which had been attacked at the roots, as a result of which a withering of the leaves had taken place, were injured in such manner.

When the eggs of the insect hatch the young maggots immediately seek the roots, enter them, and soon reduce the tissues to such an injurious extent that the leaves of the plants wilt, become discolored, and eventually fall down. Such injury, of course, depends entirely upon the number of maggots working in the single root. Under favorable coditions of growth and when later in the season only a very few maggots are in the stem of such plants as cauliflower and cabbage no serious injury will result. We have found in the roots of a single plant as many as 127 maggots, and under such conditions, of course, the plant is either soon killed or its marketable value greatly reduced. This statement applies particularly to early grown crops of cauliflowers, cabbages, turnips and radishes.

We have observed young maggots after hatching from eggs penetrating to the root system. Their main object is to avoid light, and the quicker the penetration occurs the more likely are the young maggots to survive. Those maggots hatching from eggs deposited near the stem are attracted to the crevice formed between the stem and the soil. Many hatching from eggs deposited at a short distance from the stem of the plant on the surface of the soil, in all probability pass down through the soil until a root is reached. In laboratory experiments performed with freshly hatched maggots, carefully transferred to the surface of the soil, even when they were placed at half an inch from the stem of the plant, they burrowed downwards to the roots through some slight crevice in the soil. During such observations they were seen to stand upright with their heads inserted in a crevice, gradually working their way into the soil, until finally they became lost to view. In the laboratory, when the soil was compacted on the surface, the young maggots were unable to burrow.

In the Ottawa district of eastern Canada the conspicuous indication of the presence of the maggot in cauliflowers and cabbages, particularly the former, is very apparent early in July, at which time the weather is very often hot and sultry. Although the maggot in Canada is present throughout the entire growing season, it is largely in May and June that the important injury to the plants is effected. In the Ottawa district entire crops, particularly of early cauliflowers and radishes, have been destroyed before the middle of June.

As mentioned above, a few maggots present in the stem would not destroy such plants as cabbages or cauliflowers, but it is different, however, in the case of radishes or garden turnips, the presence of one or two maggots being sufficient to render them unfit for the table. In the Lower Fraser Valley of British Columbia the maggot is specially injurious to plants grown in the open seed bed. In 1913 as high as 98 per cent of plants in certain beds were killed before the end of May. Radishes were also injured in the same month to a like extent. During the last two years, however, we have grown at Agassiz, B. C., crops of radishes in open cold frames during April practically free from maggot attack. Egg laying is continuous throughout the growing season and from reference to the question of egg fertility there must be large numbers of the maggots present from early summer until late autumn. This is proven by the fact that in eastern Ontario, where we have grown crops of radishes during the entire season, larvae have been found freely in the roots of plants up till the middle of September and in late cabbages as late as November 9. In this latter month the larvae have also been found in considerable numbers at Agassiz, B. C., in the roots of both turnips and cabbages.

Susceptibility of Plants

As is well known to market gardeners, cauliflowers succumb to the attack of the maggot more readily than cabbages. This does not appear to be a result of any special choice on the part of the fly to oviposit on cauliflowers over cabbages, as our records indicate that the opposite might be the case. For instance, for a period of 17 days, between June 25 and July 11, 1915, at Agassiz, B. C., 1418 eggs were deposited on six cabbage plants while 1038 eggs were laid on six cauliflower plants. In our work with this insect we have learned to accept the vagaries of the adult in the matter of egg deposition, hence we do not claim any special preference on the part of the fly to oviposit on any special variety of plant during the height of the egg-laying period. Records have been published at various times by those who have studied this insect in relation to crops, which were obviously based on actual results, indicating that a possibility of relief from attack might be expected in this connection. Our work, however, has shown that an apparently conclusive result of one year might be entirely reversed in the following year, and further that results might conflict even within a single season's work. This has made such a study very difficult. We consider that the supposed susceptibility of cauliflowers over cabbages is probably due to the lesser vitality of the former plants.

Seed bed trials have been conducted at Agassiz, B. C., with many different varieties of both cabbages and cauliflowers, in order to prove whether or not there existed an immune or a non-suscepitble variety of plant. Some of the Red Cabbages in our experiments were less attacked than many other varieties but from a confusing amount of data we are forced to the opinion that in all probability nonsusceptible plants do not exist.

Other Causes of Injury

In addition to the damage effected by the Cabbage Root Maggot, there are two other types of injury which annually cause much destruction and which are often confused with root maggot injury. One of these is a damping-off fungus and the other is known as Club Root. In some years the damping-off fungus is extremely destructive in seed beds of cauliflowers and cabbages, thousands of young plants being destroyed. This disease, as its name would indicate, finds ideal conditions for development in dampish situations, and its presence in a seed bed is noticed by the falling over and dying of the young plants. The other disease, Club Root, occurs freely in eastern Canada under field conditions, an destroys cabbage, cauliflower, and and destroys cabbage, cauliflower, and

Reproduction

Oviposition.—The female fly, previous to oviposition, may be seen hovering around food plants, settling on the leaves and on the ground. When prepared to deposit eggs the fly will move over the surface of the ground with moderate activity, in search of a suitable place to oviposit. Eggs have been observed both at Agassiz, B. C., and Ottawa, Ont., deposited on the surface of the soil within a radius of two inches from the stem of the plant. The eggs are most abundant nearer the stem and far the greatest numbers are deposited on the stems or in the crevice surrounding the stem of the plant. We have taken during July at Agassiz, B. C., from a single cauliflower plant 101 eggs deposited within 24 hours. This indicates the activity of flies during the height of the mid season oviposition period, and shows further that several females deposit eggs on the same plant in a single day. It is interesting to consider the reason why the female fly deposits her eggs so commonly on the surface of the soil around the stem of the plant. The answer doubtless lies in the fact that the shape of the leaves and their relative placing on the stem of the plant are particularly adapted to collect all available moisture in the form of rain or dew and pass it down the stem to the surface of the soil. In this manner whatever surplus moisture is left by the leaves will reach the soil within half an inch of the stem and thus affect the eggs.

Later, in the autumn, eggs have been observed deposited on the stem of the plant above ground and also on the fleshy leaf stalks, but this location for oviposition from our observations is not considered as being a very common habit even at the time of the year when the roots of the plants are old and hard.

Our notes, taken at Agassiz, B. C., in 1915, record oviposition until October 22, and almost invariably the eggs taken about this date were observed attached to the plant just below the surface of the soil in close proximity to the stem. Cold, damp weather causes the flies to cease ovipositing on plants, hence the close of the oviposition period in the Lower Fraser Valley of British Columbia occurs conjointly with the approach of the autumn rains.

A chart has been made of the egg deposition of the flies during the season of 1915 at Agassiz, B. C. During the early part of the season—April 17 to May 20—exact records were kept on the actual daily deposition of eggs on twenty-five radish plants. The examination of these plants, as with the examination of the cauliflowers and cabbages which is mentioned later, consisted in carefully counting and removing all eggs once a day, usually about the noon hour, placing them in vials, and later counter-checking them in the laboratory. In this way we believe we have obtained an exact representation of the egg laying habits of the fly, showing not only the number of eggs laid, but the relation between egg deposition and meteorological conditions. The number of eggs removed from the radishes between April 17 and May 20, while based on the record of twenty-five plants, has been reduced on the chart to read on the average of one plant, for the sake of convenience.

At the time this record from radishes was being obtained the seedling cabbages, cauliflowers and brussels sprouts were growing under a cheese cloth screen, hence the small patch of radishes from which twenty-five had been selected on which to observe oviposition was practically the only attraction for the flies in the immediate neighborhood.

On May 13 and 14, 1915, the transplanting of cabbages and cauliflowers (2,500) took place. Twelve cabbage plants were selected on which to observe oviposition, daily notes being taken between 4 and 6 p. m. in this instance. Observations on the plants were begun at time of transplanting and continued until September 30, by which date the plants had become too large and unwieldy to make accurate observations, in fact some were showing decay. Eggs were first observed on adjacent cabbage plants on May 16, and on the days following, but no eggs were observed on the twelve plants under observation until May 21. From this date, therefore, until September 30 daily notes were kept on the egg deposition.

Between June 20 and July 11 six cauliflower plants were selected from different parts of the field, from which to collect data in regard to the egg deposition on cauliflowers as compar-

ed with cabbages. The results of our findings in this connection are mentioned later, and we were satisfied at the time that the cabbage plant was chosen for egg deposition in preference to the cauliflower plant.

During the week following July 11 an occasional examination of the cauliflower plants repeatedly revealed the possibility that our records just obtained were not being sustained, and consequently our former deductions might be incorrect. Hence the daily examination of the six cauliflower plants was again commenced on July 20 and continued from this date until October 26.

It does not seem possible, however, to obtain a true record of the egg-laying habit of the fly from one kind of plant. Our records indicate clearly that we would incline toward a wrong interpretation of the autumn habits of the fly if we confined, for instance, our records to cabbages alone. From what has been stated and from an examination of the table showing numbers of eggs laid on individual plants, egg deposition on cauliflowers in September and October would indicate marked activity on the part of the adult flies, while on cabbages the number of eggs deposited during that period was comparatively few.

The maximum and minimum temperatures, the sunshine and precipitation records, are also given in the chart, hence with the information relative to prevailing climatic conditions placed in comparison with the daily increase and decrease of the egg depostion records we are able to observe more clearly how such conditions affect the habits of the adult fly.

The female fly does not seem to follow any regular practice in laying her eggs. On many plants these will be found laid singly, in groups of two, three or four, or the eggs may be found in masses comprising as many as 15, 18, 20, and even 30.

The following represents the data obtained in the course of the egg deposition experiments just outlined:

Eggs Laid on Individual Plants

Crop, radish; number of plants examined, 25; actual number of eggs deposited, 3,437; dates, April 17 to May 20; average number of eggs per plant 137.4.

Crop—Cabbage, transplanted May 13th:

Plant No. 1—May 21 to 31, 0; June, 156; July, 98; August, 50; September, 32; total, 336.

Plant No. 2—May 21-31, 16; June, 307; July, 153; August, 254; September, 33; total, 763.

Plant No. 3—May 21 to 31, 8; June, 277; July, 263; August, 164; September, 26; total, 738.

Plant No. 4—May 21 to 31, 6; June, 14; July, 250; August, 66; September, 2; total, 338.

Plant No. 5—May 21 to 31, 5; June, 234; July, 217; August, 8; September, 20; total. 484.

Plant No. 6—May 21 to 31, 2; June, 299; July, 610; August, 72; September, 13; total, 996.

Plant No. 7—May 21 to 31, 5; June, 231; July 252; August, 73; September, 13; total, 574.

Plant No. 8—May 21 to 31, 36; June, 304; July, 120; August, 0; September, 0; total, 460.

Plant No. 9—May 21 to 31, 5; June, 158; July, 8; August, 1; September, 0; total, 172.

Plant No. 10—May 21 to 31, 1; June, 277; July, 118; August, 28; September, 14; total, 438.

Plant No. 11—May 21 to 31, 0; June, 456; July, 136; August, 6; September, 0; total, 598.

Plant No. 12—May 21 to 31, 2; June, 413; July, 252; August, 36; September, 2; total, 705.

Crop—Cauliflower, transplanted on May 14:

Plant No. 1—June 20 to July 11, 128; July 20 to 31, 262; August, 127; September, 168; October, 126; total, 811.

Plant No. 2—June 20 to July 11, 251; July 20 to 31, 249; August, 222; September, 142; October, 63; total, 927.

Plant No. 3—June 20 to July 11, 176; July 20 to 31, 3; August, 120; September, 98; October, 24; total, 421.

Plant No. 4—June 20 to July 11, 263; July 20 to 31, 163; August, 454; September, 241; October, 122; total, 1,243.

Plant No. 5—June 20 to July 11, 148; July 20 to 31, 100; August, 303; September, 445; October, 67; total, 1,063.

Plant No. 6—June 20 to July 11, 224; July 20 to 31, 254; August, 329; September, 217; October, 26; total, 1,050.

Collective Data

Total of 6,602 eggs were laid on twelve cabbage plants between May 21 and September 30 (133 days), an average total per plant of 550.1, or an average of 4 eggs per plant per day.

Total of 5,515 eggs were laid on six cauliflower plants between June 20 and October 22 (117 days), an average total per plant of 919.1, or an average of 7 eggs per day per plant.

Some most important and interesting information is to be derived from the above figures. We observe that during the season of 1915, 137.4 eggs were laid around a single radish in the early spring; 550.1 were laid around a single cabbage plant during the summer, and 919.1 eggs were laid around a single cauliflower plant between June and October.

To illustrate the degree of infestation in the plantation in which these records were obtained, it may be stated that from 215 untreated cabbages 26 died as a result of maggot attack (12.1 per cent), and of 210 untreated cauliflowers 24 died (11.4 per cent) during the season of 1915. Many other plants of course were infested by the maggot, but the plants survived the attack although the size of the heads was more or less affected.

During the course of the work involved in taking this egg deposition record it was observed, in the case of radishes, as also in the case of the cauliflowers and cabbages, that the larger plants seemed to attract the adult flies, in consequence of which more eggs were taken from stronger growing plants. It is impossible to say whether this is an invariable rule, but nevertheless we have facts to support this contention so far as our work goes. For instance, cabbage plant No. 4 was checked in its growth in the seed bed, probably by a light attack of a fungous disease; at any rate it required considerable care to enable it to survive after transplanting; as a result, during May and June it remained fully half the size of the other plants under observation. The egg deposition on this plant, it will be noticed, was 20 eggs for the two months.

Then again cabbage plant No. 9 was a strong growing plant in the first six weeks of its life, but early in July its leaves commenced to discolor. It was impossible that maggots were attacking the roots, as all eggs laid around the plant from the day of transplanting had been removed. On examination it was found that a mole had passed directly beneath the plant, thus interfering with the root system. A check, therefore, in its growth resulted, from which apparently it never recovered. It will be noticed that 9 eggs were deposited around this plant during July, August and September. It seems apparent, therefore, that there is a relation between the size of the plant and the number of eggs deposited. The choice of the larger plants was also very clearly evidenced in the egg counts on individual radish plants.

It was noted, further, in the study of the egg deposition that frequently long stemmed plants were preferred to the plants with short stems, on days of bright sunshine and in fine weather. In cloudy, windy or rainy weather it was frequently observed that the adult flies sought the shelter of the short-stemmed, broad-leaved plants which afforded greater protection from the elements for the purpose of egg deposition. A glance at the egg deposition figures will show that cauliflowers attracted flies more than did the cabbages. The former, of course, is well known to have a tall, erect habit of growth.

It will be observed, therefore, from these few statements that the question of the severity of an attack by the maggot is partially answered by a consideration of climate, size or health of the plant.

(To be continued in our next issue.)

DR. C. C. JAMES HAS PASSED AWAY

The agricultural interests of Canada have lost a faithful and distinguished worker in the person of Dr. C. C. James, Agricultural Commissioner, who died of heart failure on the evening of June 23d while on an electric car en route from St. Catharine's to Niagara-on-the-Lake.

Dr. James was born in Napanee, Ont., on June 14, 1863. He was graduated in natural science by the Victoria College, Cobourg, in 1883, and in 1886 he took his M. A. degree from the same institution. For the succeeding five years he was associated with the Agricultural College at Guelph as professor of chemistry, and through his activities there was instrumental in having the college affiliated with the University of Toronto, so graduates of the Guelph institution could qualify for a degree of Batchelor of Scientific Agriculture from the university. In June, 1891, he was called to the Provincial Government as Deputy Minister of Agriculture and Secretary of the Ontario Bureau of Industries under the late Hon. John Dryden, and it was in this capacity that he became so well ad favorably known to the people of Ontario and other provinces. Under the various ministers of agriculture for twenty-one years, C. C. James was the guiding star in the agriculture of Ontario, and to his wisdom and intimate acquaintance with all matters pertaining to farm life are due the credit for many reforms and much good legislation. The District Representative System, inaugurated in 1906, and now grown to considerable proportions, is outstanding among his later accomplishments while a servant of Ontario. In February of 1912 Dr. James resigned his office as Deputy Minister of Agriculture, and was appointed by Hon. Martin Burrell, Canada's Minister of Agriculture, to study conditions throughout the Dominion and advise his department as to the best policy the government might adopt relative to that particular industry. One tangible result of that investigation was the Agricultural Instruction Act and the appropriation of $10,000,000 for agriculture, to be expended throughout a period of 10 years. Later Dr. James became Commissioner for Agriculture, and this capacity he was very actively connected with the administration of the act. Perhaps no man in public life in this country has considered the war more seriously than did Dr. James; not only as it affected Canada and Canadians, but from the viewpoint of the Empire and civilization as a whole. He was enthusiastic regarding the patriotism and production campaign of 1915, and untiring in his efforts to inspire the people of his country to produce all in their power, that the nation might be strengthened and the soldiers fed. The production and thrift movement also had his able support, and the two Agricultural War Books are the result of his labors.

A brilliant literary student and lover of poetry and historical subjects, Dr. James maintained a high academic standing besides his activities in the councils of agriculture. He was a member of the Board of Regents of Victoria College, of which he was a distinguished graduate and a member of the Senate of Toronto University. The latter institution in 1912 conferred upon him the honorary degree of Doctor of Laws, and in 1911—the Coronation Year—he was made a Companion of St. Michael and St. George, C. M. G., by the King. He had also served as President of the Ontario Historical Society, and in 1905 was elected a Fellow of the Royal Society of Canada. He was a forceful speaker and writer, and many works have been published on historical and agricultural matters which came from his pen.

The late Dr. James is survived by his wife, to whom he was married in 1887, and one son, Lieutenant Wilfrid C. James, of the 142d Battalion. The immediate family and relatives are not alone in mourning the loss of this pioneer and friend of agriculture, who for three decades labored in the interests of the farmer. His departure will be regretted by all Canada, the country he served so well.

THE FALL FAIRS

A short time ago we addressed letters to the managers of the various Maritime Fall Fairs, inquiring about their respective dates. At the time of writing we have replies from several of them. On another page of this issue will be found the advertisement of the Halifax Exhibition, which will be held from the 13th to the 21st of September. The prize lists are out, and persons who have not yet received same can have them by writing the secretary, M. McF. Hall, Halifax. The prize list is a generous one, and we look for a full house at Halifax when the fair opens.

H. A. Porter, secretary of the St. John Exhibition, writes:

"Nothing doing this year. Our buildings are all equipped as barracks and it would mean an expenditure out of all proportion to rip out the present fixtures and restore them after an exhibition, even if we could obtain permissio to use the military grounds, which in itself is very doubtful."

W. S. Hooper, secretary of the Fredericton Exhibition, says:

"No exhibition in Fredericton this year. We were all ready to go ahead again this year, at the request of the St. John Exhibition Association, as their plant was (and is) occupied for military purposes, with the end in view of letting St. John take our regular year, 1917, but the government felt they were not in a position to give us the usual grant two years in succession; hence, much to the regret of the agriculturists in general all over the Maritime Provinces, the year 1916 will be a blank as far as big exhibitions are concerned.

"At a meeting of our Board of Directors held last week, it was decided unanimously to proceed with the usual biennial show on our regular dates in 1917, when we trust, all things being equal, to once again occupy some of the advertising space of your valuable journal."

D. R. Nicholson, the secretary of the Sydney Exhibition, informs us that their exhibition will be held on October 3d to 6th.

Strawberries should be graded same as any other fruit. Spread them carefully on a table, and sort them into three grades—fancy, No. 1, and culls.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. When paid in advance 80 cts. Persons taking advantage of the 80 cent rate are only entitled to it by paying in advance each year. When subscription gets in arrears, $1.00 per year will be charged. Subscribers are requested to bear this in mind. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written complaint must be made to the publisher within one week from the date of any unsatisfactory transaction, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said :—"I saw" your adv. in the MARITIME FARMER.

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Sussex, N. B.

Toronto Representative—J. Lester Davis, Miln Building 8 Johnson Street.

Montreal Representative—Dakers Cameron, St. Nicholas Building.

NOTICE TO ADVERTISERS.—Changes of ads. should reach this offiee one week before date of issue, in order to insure insertion.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

JULY 11, 1916

DATES OF ISSUE.

July	—25
August	8—29
September	12—26
October	10—24
November	7—21
December	5—19

A BARLESS CANADA

One of the first principles adopted by the publishers of **The Maritime Farmer** was that the columns of this paper should never be stained, nor its readers insulted, by giving space to intoxicating liquors advertising. This principle has been strictly adhered to during the twenty-one years that **The Farmer** has been a regular visitor to the best homes of the three Maritime Provinces and elsewhere.

Twenty-one years, did we say? Yes, twenty-one years. We have at last arrived at that age to which every manly young man looks forward with so much interest—the time when he can exercise his franchise.

In the twenty-one years that have gone by since the inception of **The Maritime Farmer** we have on many occasions been offered very tempting advertising propositions by the liquor interests, but to each and every one of them we have turned a deaf ear. There have been times when we would have materially profitted had we acquiesced and accepted liquor advertisements. Thank God we did not, and do not, like the price of blood. Neither did we, nor do we, care to help foster an industry that has brought, and is bringing, so much misery and degredation to the men, women and children of our land.

During its boyhood **The Maritime Farmer** has stood the test, and now in its manhood it has no fears for the future. We have with no uncertain sound stood up for the cause of temperance, and we have no apologies to make for doing so.

We are glad to note that **The Maritime Farmer** is not the only journal that takes this stand. In a recent issue of Good Housekeeping Magazine the following editorial, under the caption of "Two Men—and a Third," appeared:

"On April 1 Mr. Ogden Reid, proprietor of one of New York's oldest newspapers, The Tribune, caused to be inserted in his paper a notice of which the following is a part:

> " 'From today on The Tribune will publish no liquor advertisements. We have discontinued this sort of advertisely purely as a matter of business policy . . . Indulgence in alcohol is incompatible with efficiency in any field of effort. In industry, trade, and transportation, as well as in artistic and professional pursuits, the man who uses alcohol habitually imposes on himself a serious disability . . . We feel that liquor advertisements will not attract to us either the readers or the advertisers whose patronage we especially desire. We have therefore decided to drop liquor advertisements altogether.'

"In this commendable stand the proprietor of The Tribune was but following the lead of Mr. William Randolph Hearst, who on January 9 gave instructions that the use of his papers be denied to alcoholic liquors and habit-forming drugs. This meant that more than two million men could thereafter read their daily paper without having the invitation to "take a drink" stare them in the face. It was a decision of tremendous moral significance; generation after generation will increase its worth.

"These are the two men. On February 10, and many times thereafter, Mr. Adolph S. Ochs allowed to be inserted in his paper—The New York Times—this liquor advertisement:

> " 'Total abstinence is a form of fear—and fear is the cause of failure.
>
> " 'Cast out fear and be temperate or moderate in all things.
>
> " 'The temperate or moderate man calls for that wonderfully mild and mellow whiskey——'

"The name of the whiskey does not matter; what matters is that a newspaper which makes a claim to probity can be so debased by the money which the whiskey manufacturers are willing to spend freely in the few—and constantly becoming fewer—places where it will be accepted in exchange for carrying appeals that lead some readers to part with money, some with self-respect, some with honor, without the slightest value in return. Dr. Wiley says of this particular 'ad' that it is the most pernicious he has ever seen. At the man who is walking uprightly it points a finger and calls "Coward!" It unlooses a train of suggestions in the mind of the man who is not firmly fixed in his course, and has doubtless led thousands to "that wonderfully mild and mellow whiskey"—the kind that leads by a devious path to the same hell of moral shipwreck to which the usual counter whiskey leads directly.

"This is the third man. All of them, and their papers, are known throughout the United States. Perhaps the 'total abstinence' in the papers of the two will encourage other newspaper owners; we trust that the 'moderate' sophistry in the third will fall as seed upon stony ground."

In the not distant future we will undoubtedly see a barless Canada. Such an accomplishment would have been predicted an utter impossibility ten years ago, but today it comes with but little public effort. It gives expression to a pronounced awakening of public opinion, resulting from our present national economic condition.

Manitoba, Saskatchewan, and Prince Edward Island now have prohibition, and Ontario will be dry in September next. Alberta will come under prohibition during the summer. On July 1st the Nova Scotia Temperanct Act came in force in Halifax. Forty-six saloons, including the hotels, closed their bars at midnight June 30th. On March 15th the city granted them licenses for one year, but the legislature has passed the act declaring the licenses void. New Brunswick and British Columbia are taking action in the same direction, and the New Brunswick prohibitory law comes into force on May 1, 1917. This leaves only Quebec to lag behind. The majority of rural districts in Quebec have experienced the beneficial results of local option, and may agitate for further restrictive measures to the liquor traffic.

FIRE PREVENTION

Fire losses are so tremendous in volume as to be appalling, amounting yearly to hundreds of millions, mostly in the towns and cities. Yet they affect rural communities in more ways than one, primarily in cost of a fire insurance policy wherever the risk. Again, cost of insurance borne by the manufacturer, the merchant, the transportation company, add just that much to overhead expenses and in turn are passed on to the consumer. The New York Journal of Commerce shows losses by fire in the United States and Canada the first three months of this year at just a little short of $85,000,000; grand total for March alone over $38,000,000.

While frequency of fires in the country is less than in congested city districts, lack of fire-fighting facilities usually means a complete loss once a fire is under way. With the largely increased use of fuel oils for automobiles, tractors, or stationary engines, the hazard is keener now than a few years ago. The necessity for watchfulness and proper equipment for fighting fire in its incipient stage is therefore all the more necessary. Clean-up week is worth while, if no other reason, because it stimulates care in this direction, to remove all rubbish and see to it that it is not allowed to accumulate.

More than once it has been pointed out in these columns that the farm should be equipped with some sort of fire extinguisher so placed that it can be brought into immediate use at the first sign of fire—something which can be operated readily by the farmer's wife or children as well as by himself. Long ago it became a recognized fact that these small fire extinguishers have many things to commend them and are thoroughly trustworthy. Various patterns are on the market and obtainable at small cost. Some of these are most valuable for extinguishing gasoline fires; water in such cases is practically useless. Attention to details, of course, including the fact of adequate water supply, will afford protection in untold numbers of instances, putting out incipient fires and preventing what to the farmer is a veritable conflagration.

CHEAP WAY OF BREEDING

We believe the cheapest way for a man of limited funds to get the use of a pure-bred sire is to encourage a bunch of his neighbors—say a dozen—to co-operate with him. The man with limited funds can hardly afford to pay the price for a pure-bred sire for his own exclusive use. The more fortunate neighbors will not want to waste money in exclusive ownership, either; so I would suggest a practical way is to own a pure-bred sire in a neighborhood partnership; then all can use him until his usefulness is exhausted by reason of relationship to the cows of the community. Then he may dispose of him to some other equally wise neighborhood.

THE NEW BRUNSWICK PROHIBITION ACT

As stated on the previous page, The Maritime Farmer has no apologies to offer for championing the cause of prohibition. The fight is on to dry-clean New Brunswick. The opposing forces are fighting "tooth and nail." It is a fight of right against wrong. It is a fight in which the friends of temperance cannot afford to be lethargic. You in your small corner, and the other fellow in his, must do your utmost if your cause would triumph.

Following are the essential features of the New Brunswick Prohibition Act, which will come in force in your county as soon as the Scott Act is repealed:

On December 10th, 1915, the representatve of the Dominion Alliance waited upon the Government, asking for the passing of a Prohibition Law for the whole Province, and to come into effect after a referendum vote.

The Government agreed to the request of the Alliance to enact a Prohibitory Law and to take the Allance into its confidence in the preparation of the same.

A committee of seven members of the Alliance was appointed to confer with the counsel appointed by the government to draft the bill.

On a number of occasions the committee met to consider the different sections of the bill, and gave to it lengthened and careful consideration.

With the exception of a few sections, the bill met with the hearty approval of the committee, which is of the opinion that the act passed by the legislature is one of the best anti-liquor laws known, and if properly worked will accomplish the purpose in view.

The government assumed full responsibility for the bill as a government measure, and for the bringing of it into force without the necessity of a referendum.

The legislature passed the measure with only two dissenting votes.

In counties under the Scott Act it is necessary that repeal elections be held before full advantage can be taken of the new law.

Inasmuch as copies of the new Prohibition Act will not be available for some time, it has been considered advisable to issue this brief statement of the essential features of the act:

Prohibitions

1. All licensed barrooms and clubs will be abolished, and thus the treating system will be eliminated. Sections 25, 26.

2. This measure prohibits keeping any liquor in hotels, clubs, offices, places of business, boarding houses, etc. (Clause t, Section 2.)

3. This law prohibits any one from advertising liquor upon any vehicle of transportation, or at any public place or resort, or upon any sign or bill board in the Province. Section 38.

4. This act prohibits treating and drinking in public places. It is an offence to treat or offer liquor of any kind to any person in any street or car, or upon any railway passenger car or coach or platform while the train is in the service of passenger transportation in the Province. Section 6.

5. This act prohibits any one under the influence of liquor to drive, operate, or have charge of the power or guidance of any automobile, motorcycle, or any motor vehicle propelled by other than muscular power. Section 201.

Permissions

6. Provision is made for the sale of liquor for medicinal, mechanical, scientific, and sacramental purposes through licensed drug stores. Section 2 (n) (o).

7. Hospitals are permitted to keep liquor for the use of patients, and sick persons are allowed to have liquor in their room. Section 40-41.

8. Properly qualified persons such as druggists and doctors, etc., can obtain alcohol for strictly medicinal, mechanical, or scientific purposes. Section 2, Clause n.

9. A householder is allowed to keep liquor in his own home for his private use, provided it is not purchas d within the Province. Section 8-9.

Penalties

10. A fine of not less than fifty dollars and not more than two hundred dollars, and in default of immediate payment to be confined to jail for not less than three months nor more than six months, is the punishment for first violation of this act. For a second offence no fine is made, but the offender will be committed to prison for not less than six months nor more than twelve months, and in the discretion of the magistrate he may be put at hard labor; and for a third offence to be committed to jail for not less than nine months nor more than twelve months; and for every subsequent offence to be imprisoned at hard labor for one year.

An Effective System

11. When any constable, policeman, or local inspector sees any person in a state of intoxication or with liquor in his possession, that officer can cause said intoxicated person to go before a magistrate or a justice, or any town clerk, and have him tell where he got his liquor. He shall make an affidavit or affirmation as to where he got such liquor, and failure to do so to the satisfaction of the person taking the affirmation he can be arrested and imprisoned until he makes such affidavit or declaration. Sections 170-171.

Civil Remedy Section

12. A civil remedy is provided by the Act in the case of a person whose death has taken place while intoxicated. When any person who has drunk liquor which has been illegally furnished to him comes to his death by suicide or drowning, or perishing from cold or other accident, the person who furnished the liquor becomes liable to an action for personal wrong at the suit of the legal representative of the deceased, who may recover damages of not less than $100.00 and not more than $1,000.00, as may be fixed by the court. Section 175.

When and How it Becomes Operative

13. In every county of the Province where the Canada Temperance Act is now in force this act will come into operation immediately upon the repeal of the Canada Temperance Act. In those counties where the New Brunswick License Law is now in force this act becomes operative on May 1, 1917.

Some of the Things That Make the New Temperance Measure Superior to the Scott Act

In the matter of search under the Scott Act endless trouble was caused by the system followed. It was necessary under this law for the inspector, before he could make a search, to swear out a search warrant, which said warrant could only be executed in daytime. Now, any one who knows anything at all about the enforcement of this act knows that this system was a most prolific one for trouble, for by the time the warrant was obtained, and before it could be executed, somehow or other the information had gone abroad.

Now under the new prohibitory law this trouble will be avoided. Where the proper officials have just and reasonable grounds for suspecting that an illicit trade is being conducted, all that will be necessary will be for them to make the search. This simplifies matters.

If it is a private dwelling house that is suspected of violating the law, then a search warrant is necessary, but the search can be made at any time or times within ten days from the date thereof.

The house, or any part of it, can be entered by force if need be and searched for liquor. The officer can examine any document containing entries in connection with liquor. He may, if he deems it ecessary, break open any door, or lock, or fastening, or closet, or box, or other article he suspects to contain liquor. Not only so, but if liquor is found to be kept illegally then the officer having the warrant can arrest the person keeping the liquor.

The new prohibitory law is much more up to date than the Scott Act as far as penalties are concerned.

For a first offence under the Scott Act the fine is $50.00 or one month's imprisonment.

Under the new law the penalty is a fine of not less than $50.00 and not more than $200.00, and in default of immediate payment to be imprisoned for not less than three nor more than six months.

For second offence under the Scott Act the fine is $100 or imprisonment for two months, with or without hard labor.

Under the new law no fine is given, but the offender will be sent to jail for not less than six nor more than twelve months.

For a third offence under the Scott Act the offender is given a term of imprisonment not exceeding four months, with or without hard labor.

Under the new law, for a third offence the offender will be sent to jail for not less than nine months nor more tha twelve months.

Then, because matters have been simplified in procedure, it will be easier to get second and third offenders under the new law.

One of the important sections, and one that shall be far reaching in its effects, is the following:

"No person shall by himself, his clerk, servant, or agent send, ship, or cause to be sent, or shipped, or bring, or carry, or cause to be brought or carried from any place in the province any package containing liquor to any person in any part of the province other than a licensee duly appointed under this Act, or to a clergyman or other person legally entitled to receive such liquor."

"No common carrier, express company, or other carrier shall accept from any person in any part of the province any package containing liquor for carriage or delivery to any person in any part of this province other than to a licensee duly appointed under this act, or to a clergyman or other person legally entitled to receive such liquor."

This new act means that on the first day of May, 1917, every barroom and saloon in this province will close its doors and go out of business. It means that when this act comes into operation no society, association, or club, either by its members, officers, or servants, or any one resorting thereto, can sell, barter, or give liquor without violating the law.

DO NOT OMIT POTATO SPRAY

The potato spraying situation for the season of 1916, like the fertilizer question, has its own peculiar difficulties. The Maine station makes the following statement: It is not presented as a full solution of these difficulties, for the causes underlying them are beyond local control, and the fact cannot be avoided that the potato grower must pay more this year for protection from blight and "bugs" than ever before. The object of the statement is to point out certain facts which if more generally known may prevent a waste of money and a lack of efficiency in spraying operations under the present conditions.

The chief object for sprayig potatoes is to prevent blight and to control the Colorado beetle. For combating late blight and preventing the tuber rot which follows it, freshly and properly prepared bordeaux is in a class by itself. Regardless of the extravagant claims which manufacturers of certain proprietary compounds have made in the past, or are likely to make, no substitute which they have put out, nor any other material yet used, which can be prepared on the farm, has stood the test when compared with bordeaux in accurate field experiments.

This coming season potato growers will be tempted as never before to use these spray substitutes. The war in Europe has created enormous demands for the copper and sulphuric acid that are used in making copper sulphate, which furnishes our active, fungicidal agent of bordeaux. As a result copper sulphate will be more expensive than it has been since it came into prominence as a fungicide, but it is not expected that the price will be prohibitive.

Even with the prospective high price of copper sulphate, the Maine station, in the light of experience here and elsewhere, does not advise potato growers to take chances by using substitutes for bordeaux in spraying for late blight of potatoes. There are just two reason for taking this position, but they are important reasons. They are that these substitutes almost without exception, regardless of the claims made by manufacturers and salesmen, cost more and are relatively less efficient—sometimes nearly worthless. In 1907 this station made some experiments in Foxcroft on the farm of, and in co-operation with, A. W. Gilman, commissioner of agriculture, where certain paste and powder substitutes were compared with freshly and properly prepared bordeaux for spraying potatoes. The average loss from using these substitutes, as compared with home made bordeaux, computed on the basis of the price of potatoes when the crop was dug, varied from $33 to $75 per acre.

In certain instances, notably for spraying apple orchards for scab, lime sulphur has largely replaced bordeaux as a spray. This material would provide a very easy solution of the difficulty if it would work equally as well on potatoes. All information to date relative to the value of lime sulphur as a spray for potatoes indicates that the benefits to be derived from it are very doubtful and there is quite positive evidence that it may be actually harmful to potatoes.

Conditions in Europe have also affected the cost of insecticides, more especially paris green, which contains copper as well as arsenic. Fortunately, certain compounds of soda and arsenic provide a soluble poison which is relatively cheap and very efficient when used for potato bugs. These materials under trade names have been sold and widely and successfully used in Maine, particularly in Aroostook County, during the last few years. Unlike paris green, they cannot be used alone, but must always be applied with bordeaux.

Because one must grow potatoes this year without potash, unusual care must be taken with the crop to prevent failure. In 1916, as never before, it behooves potato growers to: Thoroughly prepare the seed bed. Use the best seed, carefully selected. Treat the seed with formaldehyde or corrosive sublimate for scab. Cultivate frequently and well, spray with bordeaux early and often. The wetter the weather the more frequent the sprayings should be. Use a poison with the bordeaux when the eggs of the Colorado beetle are found on the potato leaves. —Dr. C. D. Woods, Maine Station.

Editor's Note.—The standard bordeaux spray is four pounds each of copper sulphate and fresh lime to 50 gallons of water; add three to five pounds arsenate of lead to potato bugs.

Fortunate is the man who has no time to take advice because he is too busy selling it.

HORTICULTURE.

POISONED SPRAYS AS A BAIT FOR THE FLY OF THE APPLE MAGGOT

Ever since the publication of F. L. Harvey on the Apple Maggot in 1889, this insect has figured in Maine entomological literature as an apple pest of serious economic importance.

From the protected situation of the maggot within the fruit, it is evident enough that sprays will avail nothing against this insect in the larval stages. Based upon this fact, the control measures recommended have been for years confined to the various methods of the destruction of the infested fruit with the object of preventing the maturing of the fly and thus reducing the number of maggots for the succeeding year. These measures are still as important as ever and should not be lost sight of or neglected. Where it is practical to carry them out thoroughly, no other remedy would seem to be needed.

Within the last few years, however, there have arisen hopes that the apple fruit fly, or adult of the apple maggot, might be induced to lay up poisons sprayed upon the trees previous to her egg laying, and the infestation of apples by her numerous progeny thus be prevented by her death.

As long as ten years ago one York County orchardist insisted: "I keep my trees well sprayed with paris green and my apples are free from maggots, while my neighbors, who do not spray, harvest fruit unfit for the market." It is not uncommon to hear an Oxford County man protest: "In commercial orchards properly sprayed with arsenicals against other pests, the apple maggot does not enter as an element of importance." On the other hand, there are Maine orchards apparently well sprayed with arsenicals where the appearance of the apple maggot is an annual occurrence.

Such conflict of testimony is by no means confined to Maine, nor to the practical orchardists.

We find Mr. W. C. O'Kane concluding after several years experimenting: "Poison bait sprays, as so far devised, have entirely failed to insure protection of the fruit of the sprayed trees from attack by the maggot. In part of the experiments there was apparently some improvement of the fruit, especially in isolated trees. This may have resulted from the death of flies because of the spray, or it may have been due to various other factors. The important point is that no such protection was forthcoming as would be essential if the treatment were to be ranked as an effective means of control."

The conclusions of Mr. J. F. Illingworth, of the Cornell Agricultural Experiment Station, in 1912, were favorable to the use of sweetend arsenical sprays.

Mr. W. A. Ross, in the Report of the Entomological Society of Ontario for 1912, says: "Tested two spray mixtures, one composed of arsenate of lead, glycerine and molasses, and the other of paris green ,glycerine and molasses, but neither yielded satisfactory results in the control of the apple fruit fly in Ontario."

An article by C. A. Good in the Co-operative News, in 1915, reports concerning spraying for this pest in Nova Scotia: "Summing up, then, so far the sweetened poison spray has been effective in the control of the apple maggot, although, of course, another season's work must be done before passing final judgment."

In view of the lack of uniformity of initial results in this very complex problem, and the serious work of the apple maggot in Maine, it seemed advisable to have experiments conducted under local conditions in this state. The Maine Agricultural Experiment Station accordingly secured in this connection the services of Dr. Henry H. P. Severin, a man experienced in the use of poisoned bait sprays for various flies, and in touch, through literature and correspondence, with other experts interested in the same problem both in America and abroad.

The experiments were for the most part confined to soluble poisons because these are more rapid in their action than the insoluble aresnates, and it was believed that if these did not prove effective in killing the flies it was of little use to experiment with the slower poisons.

The following paragraphs are quoted from the report of Dr. Severin:

"Formula.—In 1915 the following formula of the poisoned bait was used in spraying the six orchards and the apple trees in the residential section:

"Potassium arsenate, ¾ oz., dissolved in boiling water; molasses, 1 pt.; water, 3 gal.

"The solution was prepared by stirring the molasses in three gallons of water until all of the molasses on the bottom of the pail was dissolved. The potassium arsenate was first dissolved in about a quart of boiling water and then added to the diluted molasses. The poisoned bait was thoroughly agitated by pumping the liquid back upon itself with a spray pump.

"In 1915, during a very rainy season, the results obtained with three applications of the poisoned bait spray containing a soluble poison dissolved in diluted molasses showed that the infestation varied from 0 to 20 per cent in orchards situated away from the margin of the experimental area, and from 32 to 57 per cent in orchards near untreated trees.

"An even distribution of the droplets over the foliage is more effective than spraying the trunk, large limbs, and foliage of the lower branches. The number of applications necessary to insure good results canot be stated with this work still in its experimental stage. In orchards where tent-caterpillars have practically stripped or partially defoliated the trees the poisoned bait with the use of a soluble poison cannot be advocated. In orchards where tent-caterpillars are controlled, defoliation caused by spray injury is far less than the damage caused by these pests in neglected orchards. Our experience shows that after fruit growers have been convinced of the results obtained by the use of the poisoned bait spray many prefer sound fruit even if burned foliage is the necessary price.

"The fruit fly remedy has been a complete failure in the control of the pest under town conditions. With four applications of the spray the infestation varied from 4 to 98 per cent."

It will thus be seen that under town conditions, or in non-isolated orchards where flies can readily go from one group of trees to another, it was found to be of no use to apply the poisoned spray with a view to controlling the apple fruit fly.

Results, however, with an isolated orchard indicated that there may be hope of getting the maggot free apples by the application of spray baits to kill the adult flies. These records are published now, although they rest upon an experimental foundation of but two seasons' work, in order to serve as a suggestion to owners of isolated orchards desiring to combat the apple maggot with sprays. No one should undertake to use the formula indicated without realizing that it is sure to injure his foliage. In this connection emphasis might be laid on the point, however, that since this spray is a lure to the flies because of the sweet contained, it s not necessary to cover the foliage in the thorough manner required when making applications for leaf feeding insect pests or fungous diseases, and that protection for the fruit may perhaps be gained by sacrificing the leaves on only a few branches.—Chas. D. Woods, Director Maine Agricultural Station.

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MOVING THE GROWING TREE

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In moving a tree, first dig out a circle as near the size of the crown of the tree as possible, making sure to get all the roots. Leave the sod on; it holds the soil together. Cut all the broken roots off smooth.

In setting, have the hole deeper than the roots will reach, which insures them a soft place to start. Spread the roots naturally and sift in rich surface soil. The tree must be set no deeper than it stood naturally; this is so important that one person had better hold the tree up while another shovels.

Water the tree if it is planted in its growing season; otherwise not. Heap a mound of dry soil around the base and keep this stirred to prevent caking. Don't let sod form near the tree at first. The best time to transplant is just before growth starts, though the fall or late spring will do. Pick a cloudy day for the work. Prune the top according to the amount you cut off the roots.

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CONTROL OF APPLE BLOTCH

Along with other more or less known diseases of the apple is the blotch, which winters over in the form of a canker which fastens itself onto a twig or watershoot, preferably the latter, and ripens its spores the following season, spreading to both fruit and twig growth. The spores are spread by rains and heavy dew, as the worst infected fruits will be found directly underneath the cankered limbs or twigs, topmost fruit in many cases being entirely free from the infection. Rainy seasons are the worst for blotch and there is practically no blotch infected fruit in extremely dry seasons.

The blotch on the fruit first appears as a minute brown speck on the skin, enlarging rapidly as the season advances, and often covers one-fourth of the fruit's surface by gathering time. In many cases these brown spots crack open, making the fruit subject to the innumerable rot spores that abound everywhere. When once under the skin of the fruit, blotch cannot be cured or even remedied; therefore it is very advisable to catch the disease in ample time.

Repeated experiments have shown conclusively that lime-sulphur solution will not control blotch, and further that bordeaux mixture completely controls the disease. As arsenate of lead can also be used with the bordeaux mixture we have the complete mixture for the combat of blotch and numerous other fungous diseases, as well as the poison to control insects.

The blotch begins to make its first appearance during the first days of July; consequently it is well to make the first spraying, which may follow your earlier lime-sulphur-arsenate sprayings, about June 20 to 25. If the weather is rainy, follow with a similar spraying in a week; if dry, it may be delayed 10 to 12 days with safety. A third spraying should follow after about the same period of time has elapsed, and in case the season is rainy it may be well to make even a fourth spraying.

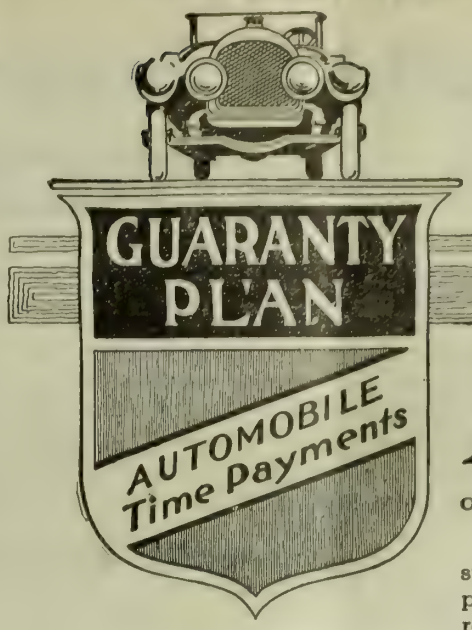
Bitter rot may be controlled by the same sprayings. Careful pruning will remove many of the cankers which can be burned, ridding the orchard of so much of the infection. I consider blotch a worse disease than San Jose scale.—Omer R. Abraham.

WASPS THAT ATTACK FRUIT

The wasps known as hornets and yellow jackets do considerable harm to ripening fruit by eating through the skin in order to suck out the fruit juices. Much of this harm is attributed to bees, but in almost all cases when bees are feeding on the exuding juices they are frequenting holes made by other insects.

These wasps nest in the ground or in old trees. If the nest can be discovered, which usually means watching the insects when they fly home, the entire colony can be quickly exterminated. A gallon jug, quarter full of water, and placed next to the nest is all that is needed. A wasp will emerge from the nest opening, perceive the jug, and fly angrily at it. The hollow sound of its buzzing, echoing from the jug, will make it enter, when it falls into the water.

Wasps are able to communicate with each other, and the imprisoned wasp possibly calls to its sisters. At any rate, the colony, one by one, in the course of the day, will find its way into the jug. This system is perhaps easier than the distribution of poison on food for the wasps. If the latter method should be tried a little paris green or white arsenic may be distributed on minced meat and scattered where the wasps will find it.—Dr. A. L. Melander.



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POTATOES FOR CALVES

J. T. McKim, of Indiana, writing in to Hoard's Dairyman, says: You see I am Irish, and an Irishman usually thinks that potatoes are good for everybody and everythisg that lives. Remembering how my father on the home farm fed potatoes to the pigs and calves and sometimes to the cows, and how my mother and sisters fed them to the chickens, and remembering how fat and sleek all our stock was at all times, I concluded when I began raising calves by hand that I would adopt the same method that brought such good results.

To be sure that I would make no mistake, I tried out the potato diet on some good-for-nothing scrub calves, not caring very much what results I might have. The scrubs seemed to do every bit as well on the potato diet as the better calves did on the whole milk diet. The next season I treated all my calves on the potato diet except one—a bull calf from a high producer that I wanted to make just as good as possible. I took the bull through until weaning time on whole milk of his own mother's production, but I must confess the difference in the potato-fed calves and the whole-milk fed calf was scarcely noticeable in so far as growth and flesh were concerned.

Here is the way I did it: After letting the calves to their dams for two or three days, I took them off the cow, but gave them the whole milk from their mother until the milk was ready for market. Then I fed them one-third whole and two-thirds skim milk for about ten days, and by the fifth day off whole milk I began the potato diet, decreasing the whole milk and increasing the potato.

At potato-digging time I put the culls away carefully, and marketed the top-notchers. When preparing a feed I washed the potatoes as clean as if preparing for table use, boiled them until thoroughly cooked, crushed them until they were a finely pulverized pulp, mixed them with milk, and then passed the whole mess through a wire screen to make sure no lumps would get to the calf's stomach. This latter process also removed the skins. The proportion of feed was at first four ounces of potatoes to the gallon of milk. I watched the calves closely, and if all was going well I would increase the potatoes to six or eight ounces as the case might suggest to me. I kept on increasing every few days until I reached what I considered a full feed, which was seldom over one pound to the gallon. Sometimes when a calf was a great big lusty fellow and seemed to need more feed I would give a little higher per cent of potatoes. I was very careful not to overfeed. My rule was never feed until the calf was bloated and would take no more. Better let him off unsatisfied than to stuff him until his sides pouch out; a whole lot better let him beg for more than to have him turn away in disgust from the milk pail. My experience in calf breeding is that a large majority of our calf troubles come from overfeeding, especially scours.

Always warm the milk and potatoes; never feed it cold. Be very sure to never feed when sour. When it is sour feed it to the pigs; it will do them good. When the weather is cool I cook enough potatoes to last three or four days; when warm enough to sour quickly, cook every day. When we make cheese, which we do sometimes, we feed the whey the same way. We never feed less than three times in twenty-four hours, and if we have a bunch of calves we are dead in love with we have fed six and sometimes eight times in twenty-four hours. It takes work—of course it does. Some would say work and trouble. No, not trouble; work and pleasure is the better way to put it. Certainly it is not one-hundredth part as much work as your mother and my mother put on us. See the pleasure they got out of it until we got too big to listen to mother—then some of us were not worth the trouble, were ot worth half as much as the nice, pure-bred Guernsey calf.

Admonition: If you don't know about this kind of feed, try it out on a two-dollar scrub calf. The same kind of feed is very fine for pigs and chickens. Try it.

* * *

Have any of our farmer-readers tried this method?

CLEANING THE MILK THINGS

Milk utensils should first be rinsed with cold water to remove all particles of milk, then thoroughly scrubbed with a brush in warm water to which a little good washing powder has been added. They then should be steamed, or at least rinsed in boiling water. No wiping clothing should come in contact with them after scalding. When possible, all utensils should be placed in good sunlight and pure air.

The separator, of course, must also be cleaned thoroughly. No one should place any confidence in the claim that separators wash themselves by simply running water through them. Washing a separator is not a difficult task if done soon after separating. The water for washing should be warm, but not hot enough to cook the curd.

If it is not convenient to wash the machine immediately after separating, the bowl should at least be taken apart and immersed in water. This will loosen all the curd and make washing comparatively easy. If the parts are scalded with hot water or steam after washing and left in a sweet, clean place to dry, no wiping with a cloth is necessary.

The best milk pail is the one so constructed that the least possible amount of dirt falls into it. The small top pail may have some objections, but its advantages are so evident that it rapidly is being adopted by our best dairymen.

All milk utensils should be heavily tinned and as free from seams as possible. Crevices and seams should be flushed full and smooth with solder. If pails of this kind cannot be purchased, take your pails to a local tinner and have him fill up all crevices with solder. Wooden pails readily absorb milk particles, making it almost impossible to keep them sweet and clean, and for this reason they should have no place in the dairy.—J. H. Frandsen, Nebraska Agricultural College.

"NATIONAL" Separator Owners

NOTICE!

AS SUCCESSORS of the Raymond Manufacturing Company, Limited, of Guelph, Ont., it is absolutely necessary for us to revise the list of names and addresses of all owners of "National" Separators. This will enable us to give prompt service and attention in supplying parts for the "National" Separator—a machine that in the last twenty years has given remarkable satisfaction. We are anxious that the change of ownership should ensure full protection of the interest of every Owner of a "NATIONAL" SEPARATOR.

It is in your own interests, then, that we ask you to mail the coupon, properly filled out, TO-DAY. We will gladly send you the new book on "Superior" Separator facts, showing the improvements we have made in the new machine we now offer under the name of

"Superior" Separators

The ball-and-socket spindle, ensuring an absolutely self-balancing bowl, is but one of the new and exclusive features which place the "SUPERIOR" in the very front rank of cream separators. Even if you are not a "National" owner, mail the coupon to-day for the booklet.

The Ontario Machine Co., Limited
18 Bloor Street East
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Successors to the Raymond Manufacturing Company Limited, of Guelph, Ontario

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I own a National Separator, Number .....
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Please send me catalogue of "Superior" Separators.

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Here is a reliable Mower for cutting your hay

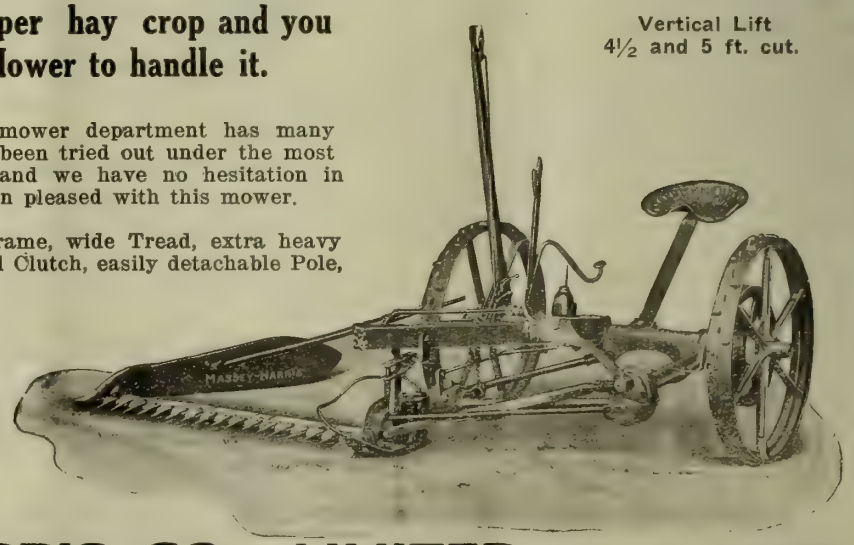
Prospects are for a bumper hay crop and you will need a reliable Mower to handle it.

This latest product of our mower department has many new features—all of which have been tried out under the most difficult and trying conditions, and we have no hesitation in saying that you will be more than pleased with this mower.

It has a strong one-piece Frame, wide Tread, extra heavy Push Bars, Improved Gearing and Clutch, easily detachable Pole, simple and easy Vertical Lift, Under Draft, Flexible Swath Board and many other features you must see to really appreciate.

Our nearest agent will be glad to show you.

Vertical Lift
4½ and 5 ft. cut.



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Amatite stands alone in the ready roofing world. It is the one roofing you don't have to paint. Once laid, it will last for years without any attention from you. For sidings and steep roofs it is supreme. If you could only see how it is made—see the tough, fibrous felt, the dense, non-volatile saturating compound that keeps it water-tight, you would understand our claims. Try some.

A Roofing Triumph

The durability of Amatite is only one of its fine points. The same structural feature which makes it unnecessary to paint Amatite, gives it a distinctive and beautiful appearance. We refer to its sparkling, mineral surface. Improves the appearance of any building. The best buy in the ready roofing market.

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No Summer Vacation

Will be given this year, but we will do our "bit" by fitting young men and women for the work that is waiting for them.

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S. KERR Principal.

CHAMBERLAIN'S TABLETS

Are the most thorough bowel cleanser known. Price 25c.
A month's treatment in a package.

NOVA SCOTIA CREAMERIES

The co-operative creameries in Nova Scotia are again showing a decided increase in business over former years. It is estimated that the make up to the present time is about 35 per cent ahead of this time last year.

Pastures generally over the province are good, with possibly some exceptions in Cape Breton, where the season so far has been very dry.

One new creamery has been opened this year at Margaree Forks, C. B. The make there for May was very satisfactory. Another new creamery will open at Lower South River, Antigonish County, shortly.

Creamery picnics were held over the province as follows: July 1st, Cumberland Co-operative Creamery Co., Ltd., at River Hebert; July 4th, LaHave Creamery Co., Ltd., at Bridgewater; July 6th, Milburn Creamery Co., Ltd., at Calignant Cove; July 7th, Scotsburn Creamery Co., Ltd., at Scotsburn; July 11th, Margaree Creamery, at Margaree Forks.

These picnics were addressed by Mr. George H. Barr, chief of the Dairy Division, and Mr. Harvey Mitchell, the Maritime representative of the Dairy Division, Ottawa, and also by Prof. Cumming and other members of the Nova Scotia Department of Agriculture.

A picnic was also held by the Intercolonial Creamery Co. at Lower South River on July 1st, addressed by Mr. D. W. Murray, president of the Nova Scotia Dairymen's Association, and by Prof. Trueman, from Truro.

TIMING SEPARATOR SPEED

Too low speed of the separator means loss of cream. Experiment station figures indicate that a large per cent of separator users turn their machine too slowly. The proper speed of a cream separator is indicated on the crank handle, and varies from 40 to 60 turns a minute. A uniform rate of turning yields a uniform grade of cream.

An operator can with practice so time the speed as to keep it practically uniform. Low speed means loss of cream. The probabilities are that the average operator of a cream separator could well afford to put on a speed indicator so as to be sure of running the machine at the right speed.

FULL FEED ON APPLES

Occasionally one of our cows has got into the orchard and eaten enough apples to make her seriously sick and almost completely stop the milk flow. To guard against this I now give them a few apples every day as soon as the apples are two-thirds grown, gradually increasing the quantity until each cow gets a peck twice a day.

We raise a great many apples and have these to spare. By this method there seems to be no danger from overeating, even if they get into the orchard and eat all they want. We practiced this plan for several years with no bad results. It doesn't hurt the cows, and it helps out a lot when feed and pastures get short in the fall. —W. F. Heath.

Machine Saves Time.—The average time required to milk a cow by hand, weigh and take care of the milk, etc., is seven minutes. The average time required to milk a cow with machine, weigh and take care of the milk, etc., is four minutes.

Just as soon allow a man to strike one of the family as one of the cows. Let your milkers know that if they get mad and hit a cow you are apt to get mad and strike them. Then they'll remember.

You need a new
DE LAVAL
SEPARATOR
NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREATest value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF the poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE AN IMPROVED DE Laval is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk pile long ago.

BECAUSE THE DE LAVAL Separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office as below.

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On application we will be pleased to furnish current rates.

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MONCTON, N. B.

Far more effective than Sticky Fly Catchers. Clean to handle. Sold by Druggists and Grocers everywhere.

LIVE STOCK.

DIARRHOEAL DISEASES OF CALVES

Austin Peters, M. R. C. V. S., Harvard, Mass., has this to say, in Guernsey Breeders' Journal, of one of the greatest troubles that stock breeders are called upon to contend with:

Some writers classify diarrhoea in calves under but two heads: that is, sporadic diarrhoea and infectious diarrhoea or dysentery, the germs of which may gain entrance to the animal anatomy through the fresh umbilicus or through other natural channels of infection.

The symptoms of sporadic diarrhoea are looseness of the bowels, with perhaps bloating, colicy pains and loss of appetite; the calf may be feverish, the mouth pasty, nose hot and dry; in some cases the disease may be ushered in with a chill. Fhe faeces at first may be thick and pasty, of normal color and smell, later becoming more watery and light colored, frequently expelled in jets, and finally becoming greasy yellow or dull green, frothy, sour smelling, or of a very offensive odor, and may contain flakes of undigested curd, or may be streaked with blood. The discharges become very irritating, scalding the skin below the anus and under the tail, causing the hair to fall off.

Sporadic diarrhoea may appear when the calf is a week or two old, or later when a month or six weeks of age.

Causes

There are numerous causes for this form of disease. It may be brought on by attempting to wean too early, giving dry food of a coarse, fibrous or irritating character before the digestive organs are sufficiently developed to receive such material, or from mouldy forage.

Improper milk substitutes may be another cause, especially if too rich in starch, or given in too large quantities at first.

Sudden chills may cause diarrhoea in young calves; a sudden cold snap in winter may cause calves to scour.

Overfeeding at too long intervals is another cause; it is better to feed the calf three times a day on a moderate quantity of food than to allow it to gorge itself morning and night, as is sometimes done.

Dirty vessels or milk that has been kept too long, or that is too cold at the time it is feed, may all be causes, as well as improper milk, such as milk from a cow with mammitis, or from a cow giving milk too rich in fat, or fat of an indigestible character. Sometimes food of an improper character, or medicines given to the mother, may affect her milk and render it indigestible, or even undue excitement or fatigue may influence the lacteal secretion.

These various causes may lead to the development of bacteria in the digestive canal of the calf that are not of themselves injurious in small numbers, or that have no influence on older cattle, which result in indigestion, bloating, and diarrhoea.

Treatment of sporadic diarrhoea if adopted early is usually satisfactory. In the first place, try to avoid the disease by feeding regularly at not too great intervals, taking care not to overfeed, to furnish proper food under cleanly conditions. These precautions are usually sufficient to prevent the appearance of the malady.

If a calf should develop sporadic diarrhoea, curative treatment has every chance of succeeding if undertaken in time.

Simple treatment if adopted early is sufficient; reduce the quantity of food, scald the milk, and add lime water to it, also a little bicarbonate of soda. A teaspoonful of powdered cinnamon and a teaspoonful of powdered ginger in the food is excellent, in addition to the lime water and bicarbonate of soda. If the calf has been used to having calf meal in its food, a small quantity of this will sufficiently disguise the taste of the cinnamon and ginger so that they will be readily taken if the little animal has not gone completely off its feed. If diarrhoea is due to milk too rich in fat, skim milk or milk from another cow may be substituted.

In disturbances of the digestive organs it is often advisable to give a mild purgative at the outset of the disease in order to quickly remove any irritating or indigestible material that may be making trouble. For this purpose, two or three ounces of castor oil will prove effective, or a small dose of either Glauber's or epsom salts.

In more severe attacks, where there is loss of appetite, it may be necessary to bottle medicine into the calf; in such cases, more powerful drugs may have to be employed, such as laudanum, ten to twelve drops in a little rice water two or three times a day, of subnitrate of bismuth, in doses of twenty to thirty grains two or three times daily. In some cases intestinal antiseptic such as salol or calicylate of soda will prove useful. In cases where the calf is very weak it may be necessary to keep up its strength by means of stimulants; for this purpose brandy is one of the best, given in small doses of from one-fourth to one-half ounce in a little warm water every three or four hours.

If there is much tympany in a sudden attack of acute indigestion, two or three teaspoonfuls of aromatic spirits of ammonia in three or four ounces of water will relieve the bloat, and is an excellent stimulant. This should be given in cool water; if given in warm water the ammonia starts to evaporate and causes the calf to gag, in which case the medicine might go the wrong way, enter the windpipe, and produce mechanical pneumonia. In fact, in giving bulky medicines of any kind to animals, they should be administered very slowly and carefully in order to avoid this accident.

Off for an Afternoon's Sport

Real sport too—the kind that makes the blood tingle with excitement. Don't envy the man who belongs to a gun club. Have a club of your own. Wherever you go take a

Dominion Hand Trap

It provides the cleanest and least expensive of all shooting sports. Pack one in your suit case on week-end trips. A boy can operate it. Costs only $4.85. Send for illustrated booklet. 7

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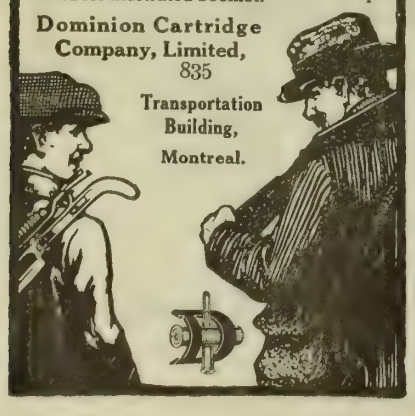

Barrett Made in Canada

Money Savers for Farmers

DON'T eat more dinner than you can hold simply because the cook has prepared more than you can eat. If you do, you'll probably have "inside information" that things are not quite right. By the same token, don't buy something that you don't need merely because it's cheap. If Robinson Crusoe had paid one cent for a postage stamp he would have been a spendthrift.

But, when you find things that have an every-day need, selling at moderate prices, then is your time to *economize by buying*. Such products will save you money. We make such commodities. This page describes seven of them. Sold by good dealers everywhere.

Everjet Elastic Paint

We have a product called Everjet Elastic Paint that will save you many a dollar every year. It is a wonderful roof paint. Applied to ready roofings, it adds years to their life, makes them leak-proof and improves their appearance. Everjet is invaluable for farm implements. Protects them from rust and keeps them new. It never peels, scales or cracks. The best carbon paint made. Good wherever you have exposed surfaces. Try a can.

Everlastic Roofing

Insurance against wind, weather and water can be had very cheaply by laying Everlastic Roofing wherever you have a slanting roof. The best "Rubber Roofing" on the market at the price. It is easy to lay, costs little and gives satisfaction for years. Just the thing for barns, outbuildings and poultry houses. Comes in rolls of 1, 2 or 3 ply weight, each roll 36 inches wide. You could pay twice as much and not get as good.

Carbonol, Disinfectant and Deodorant

The most necessary thing you could have around the house is a bottle of Carbonol. It is the best disinfectant, healer and cleanser ever made. Removes grease, germs and odors. Therefore, put some in the water with which you clean house. Heals cuts and wounds; prevents blood poisoning. Wonderful in the sick room because it prevents contagion. It will keep your stable and hen house clean, and drive flies away from garbage pails and cattle pens. The best thing you could have for a hundred different uses. Get a bottle today.

Creonoid, Lice Destroyer and Cow Spray

One of the little things so often overlooked is the relation between contented live stock and profits. Best results cannot be secured if your live stock is infested or worried by flies. Spray your horses, cows, pig-pens and hen houses lightly with Creonoid. It positively and permanently destroys vermin and lice. Keeps flies away. Makes healthy porkers, happy cows, good tempered horses. More flesh from your live stock. More eggs from your hens. More milk from your cows. Follow directions carefully.

Amatite Roofing.

Amatite Roofing is distinctive for two reasons—its bright attractive, sparkling appearance and its great durability. It has wide fame, too, as the roofing that needs no paint. Its mineral surface is waterproof and fire resisting. Amatite is made in rolls, each roll containing enough to cover 100 square feet with a 3 inch lap.

Barrett's Grade One Liquid Creosote Oil

The best fence post made will rot if not protected with a good preservative. You can make an ordinarily good fence post last 20 years by using Barrett's Grade One Creosote Oil. It is the best wood preservative on the market. Penetrates deeper than any other Creosote product. Hence it accomplishes more. We can show you tests to prove this. Save the expense of timber renewals. It's a big item. Wherever you have wood exposed to moisture or earth, preserve it with Barrett's Grade One Creosote Oil.

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Many a farmer or house owner has saved the day, by having Elastigum handy. This tough, elastic, adhesive cement is a wonder for those quick repairs that are daily coming up. And it makes those repairs permanent. If you have a leak to fix, a joint to seal, use Elastigum. Unexcelled for joining or relining gutters of wood or metal, and for flashings around chimneys. Elastigum is a real "handy man" and you ought to have it on hand. Good for a hundred uses.

Send for illustrated booklet describing Barrett Money Savers in detail. Address nearest office.

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CUTTING OFF BOAR'S TUSKS

When the tusks get so long that it is dangerous to handle the boar they should be cut off. Slip a running loop over the boar's nose and let it catch behind the tusks of the upper jaw. With this hold it is possible to snub the hog to a post and hold him. The tusks can be cut off by gripping them tightly with a pair of pincers that are strongly built and tapping the back of the pincers with a hammer. It is surprising how easily the tusks will drop off. They may also be sawed off close to the jaw.

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HIDES, SKINS, HORSEHAIR,
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If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers. Box P. 309 Windsor, Ont.

STANDARDS ARE FIXED IN THE BUSINESS WORLD

You must be governed by them and set yourself in tune with them. Of what avail is it for you to go to the business man and say, "I am willing to learn, if you will give me a chance," if the business man has standardized the requirements of his employees, in the interests of his business? The business man has no personal feeling in the matter. He might even prefer you for some reason. But to guarantee the success of his business he must kindly and firmly turn down your application.

Get in line NOW.

Moncton Business College
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Minard's Liniment Co., Limited.

Dear Sirs:—This fall I got thrown on a fence and hurt my chest very bad, so I could not work and it hurt me to breathe. I tried all kinds of Liniments and they did me no good.

One bottle of MINARD'S LINIMENT warmed on flannels and applied on my breast, cured me completely.

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100 Acres, Pair Horses, 8 Cattle

and long list tools and machinery, 400-tree maple sugar outfit; 40 acres under cultivation, 15-cow pasture, wood and fruit; daily mail, near neighbors, charming view, cottage house, new barn, spring water. Owned by a city man who to insure early sale makes low price $1600, for all; $500 down and easy terms. For full details see page 17, "Strout's Money-Making Farms," our big catalogue of 300 bargains in a dozen states. Write for your free copy today. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass., Tel. Main 3348.

America's Pioneer Dog Remedies

BOOK ON
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And How to Feed
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IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARITIME FARMER.

KEEPING THE PIGS FREE FROM WORMS

We get a good many requests for advice on ridding swine of worms. On the general subject of prevention Prof. John M. Evvard, of Ames, recommends the following:

1. The pigs should be "kept coming." The better the pigs are handled and fed the more likely they are to avoid and throw off infection. Give the young pig a good start. Old hogs do not apparently suffer much from worms generally, but even the old hogs should be well fed and carefully managed so as to keep them in good thrifty condition.

2. Good feeding of the young pigs may be accompanied by arranging creeps, placing in them such feeds as corn, tankage, wheat middlings—each in separate feeders. If these pigs are out on pasture so much the better, preferably alfalfa or clover. A little milk is a great help.

3. Free access to condiments such as air-slacked lime, charcoal, slacked coal, powdered sulphur, copperas, sodium sulphate, and Glauber's Salts, sal soda, and salt may be given—these being allowed "free-choice" style—each placed in a separate feeder. They will help some, but are not a sure prevention by any means.

4. Clean pastures and exercise grounds are important. Pastures of the annual sort, such as rape, are fine, although good clean alfalfa and clover pastures—pastures that the hogs have not run on before—are excellent. Plowing the lots helps wonderfully in getting rid of the infection. Taking the pigs away from the old infected lots and putting them on new pasture and in new lots is to be recommended. Keep the hogs away from the white grubs or the snails along the river bank so that they will not get the embyros of the thorn-headed worm. In other words, keep away from infected places. Be careful of the hog wallow. See that the water supply comes from a deep well rather than from the contaminated leachings of the barnyard where the hogs are kept.

5. Do not throw the feed out in the mud or in the infected lots. Have a concrete platform and feed there. Keep this platform clean, so that the pigs will pick up a minimum of infection. Keep troughs and the natural feeding places free from cobs, refuse, etc.

6. Drainage is necessary. Keep the lots as dry as possible. The lung worm infection is likely to be very severe in wet years; this is likewise true of other kinds of worms, such as th round worm and the kidney worm.

7. The life history of the worm should be studied. That is, of the thorn-headed, of the round, of the lung, and of the kidney, and schemes provided that will evade the worm as well as the worm eggs and the embryos at all stages in the life history of said worm.

8. Use santonin and calomel to rid the hogs of worms. The dose is about five grains of each to a 100-pound pig. For a 200-pound pig increase to seven and one-half; for a 300-pound pig to about 10 grains of each. That is called the "emergency treatment," and may be practiced on wormy pigs to advantage.

Immature or bob veal, when properly prepared, is fit for human food, especially when its deficiencies in fat and possibly in small amounts of undetermined constituents are counterbalanced in the ordinary mixed diet. This sums up the government's research work with the flesh of calves slaughtered at three weeks of age or less.

Tom—You're not turning as fast as Dad does, Mary.
Mary—No Tom, but we'll get all the cream any way with this lovely new machine. Dad says

"It Skims Clean at Any Speed"

That's what this marvelous new invention actually does.

A fixed-feed separator may skim clean if in perfect order and turned at just the ***right speed.*** But every member of the family turns the crank at a ***different rate;*** no one can maintain an even speed ***all the time***—it isn't human nature. Every old type separator has an ***unchanging inflow*** of milk. That's why it loses cream when not turned at exactly the right speed.

THE NEW
SHARPLES
SUCTION-FEED

Separator gets all the cream because it automatically regulates the inflow exactly in proportion to the separating force—always just right for perfect skimming.

The Suction-feed Separator delivers smooth cream of ***even thickness*** that churns out more butter of choicest quality. If you sell cream you can ***guarantee uniform density.***

You can increase the capacity of the Suction-feed by simply turning faster, and get through quicker if in a hurry. The new Sharples is the only Separator that can be hastened. You can easily pour milk from a forty-quart can into the low supply can. It's the largest found on any separator—and it's only knee-high.

The women folks prefer the Sharples because the simple tubular bowl is so easily cleaned. Has only three pieces—no disks to wash or to get mixed up. The tubular shape gives double skimming force.

The new Sharples is ruggedly built for hard service. It is neat, compact, runs easily and oils itself.

This wonderful machine will earn you a new dairy profit—without added expense. Our new free book, ***"Velvet" for Dairymen,*** fully describes the Suction-feed. Your copy is ready. Send for it today. Address Dept. 79

The Sharples Separator Co.
Toronto - - - - Canada

Had Weak Back and Kidneys.

COULD HARDLY MOVE IN BED.

When the back becomes weak and starts to ache and pain it is a sure sign that the kidneys are not performing their functions properly.

On the first sign of backache Doan's Kidney Pills should be taken and serious kidney troubles prevented.

Mr. Francis McInnes, Woodbine, N.S., writes: "I deem it my duty to let you know the wonderful results I have received from the use of Doan's Kidney Pills. For a long time I had been suffering from weak back and kidneys. I used to suffer the most at night, and some times could hardly move in bed with the pain. I could do no hard labor on account of my back. A friend advised me to give Doan's Kidney Pills a trial, and I am glad I did for the pain in my kidneys is gone; my back is strong, and I can perform any hard labor and get my good night's sleep. I only used three boxes of the pills."

Doan's Kidney Pills are 50 cents per box, or 3 boxes for $1.25; at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

When ordering direct specify "Doan's."

THE HORSE

REGARDING THE HORSE'S FEET

We should see that our horses' feet and legs are kept clean enough to prevent the possibility of any disease, such as thrush, grease heel, etc., which is often caused by allowing the horse to stand on an accumulation of fermenting manure, or wallow in a muddy yard that contains more or less manure. The feet of the growing colt should especially be watched, and if they do not wear evenly the elongated portions should be pinched off. Allowing the feet to grow out of shape causes uneven pressure on the joints and parts above, and has a tendency to develop ringbone, spavins, and sidebones.

Shoeing the Horse

As the horse grows to maturity and is put to work, it often becomes necessary to shoe him. There is, however, a very large proportion of our farm horses to which shoes are by no means of habitual necessity. The nature of the work, the pace at which they are required to perform it, and the character of the ground over which they ordinarily move, all unite to render artificial protection of the feet, save in exceptional cases, altogether unnecessary.

Unnecessary Shoeing

When this is true, and when it is conceded that shoeing is, even under the most favorable circumstances, an evil, a frequent source of disease, and therefore a direct source of loss, it is a matter of deep regret that such a large majority of our farm horses should be needlessly subjected to a mutilation which shortens the efficiency and too often renders their life, thus shortened, one long continued agony, for it must be borne in mind that our ordinary village blacksmith is not always the most competent of workmen.

Marring or Protecting

Without wishing to do any injustice to our knights of the anvil, it is nevertheless a lamentable truth that these wielders of the rasp and knife are so wedded to a number of traditional practices so heinous, so irrational, so prejudicial to the interests of the horse that one might wonder whether their mission were not to mar instead of protect the foot. Ignorant alike of the anatomy, physiology, and relations of the different parts, they mutilate, they cut and carve as whim, prejudice or time-honored custom indicates.

Errors in Horseshoeing

Foremost among them is the insane habit of trimming the frog and thinning out the sole till it visibly yields to the pressure of the operator's thumbs. The frog is nature's cushion; by its elasticity it wards off concussion from the less elastic portions of the foot. Only the ragged portions of the frog should be trimmed out. The frog should be left in such shape that it will fulfil the mission which nature intended for it. The farrier, having destroyed the frog, next turns his attention to the sole, which, by all traditions of his craft, must be pared down until only a thin film of soft, partially formed hoof is left to protect the living structure within against bruises and injury. Nor does the mischief stop here. The sole itself, or what is left of it, consists of soft, moist, half-formed horn, which dries and shrinks on exposure to the air, and thereby entails a further and a still more serious injury to the foot.

Pare Sparingly

Only the loose portions of the sole should be removed. The horse grows new soles to his feet just the same as he grows new hair, and when portions of this sole become loosened and ragged they should be removed, but the new firm sole should not be pared down. After the shoe is nailed on, the ordinary farrier has enough pride in his work to want to make his job look neat, so he rasps down the foot, and, to give it a few finishing touches, he rasps off the outer hard, smooth layer of natural varnish which is intended to retain the moisture in the foot. There are other specific objects in shoeing than to protect the foot, but it is not my purpose to discuss them, as they belong more properly to the veterinarian.

Supervise the Work

We believe farmers should give the matter of the shoeing of their horses more thought, and dictate to their blacksmith how they want their work done. Great good would also come in the protection of our horses if such legislation could be enacted as would require the ordinary blacksmith to know and understand something of the structure, anatomy, physiology, and functions of the different parts of our horses' feet and legs.

In the meantime, let us look well to the quality of feet and legs we are breeding in our horses, and the care we give them that we may not have ourselves to blame for any shortcomings in our horses and the profit we gain in the rearing of them.

HOW TO SAVE TIME IN HARNESSING HORSES

Harnessing horses is a very simple thing, one might think. Yet there is usually a right and a wrong way and a slow and fast way to do most work. Naturally having so much hired help about us, we have often been disgusted to see how carelessly some things can be done, and a mixed up set of harness is very aggravating. We use mostly the common trace chain harness, and at the rear of the stable, about 6 feet from the cement floor, we have hard wood pins, about 16 inches in length, inserted in a 4x5 piece nailed to the post. We have our horses trained when they come to the stable to stop at the door before entering to have their bridles removed, and then let them go to their respective stalls. We step inside the door, hank the bridle on the pin, step up to the horse, unfasten the crupper, next the girth, then hames, then place the halter on the horse, so when we remove the harness he cannot back out of the stall. Then we take hold of the hames, slip the harness back on the horse, and grab them in our arms, step to the harness pin, and place them with the hames facing the wall, the back-band following it, and then the hip straps. Return to the horse, remove the collar, and hang on pin over the harness.

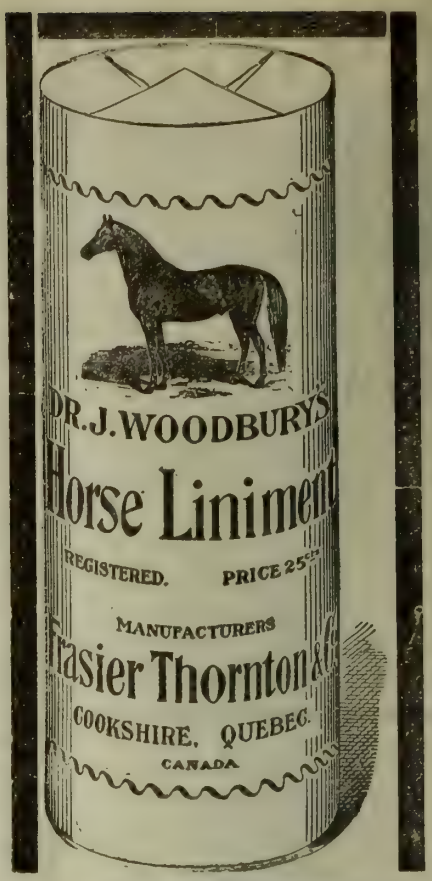
Then when we want to again harness the horse the operation is just reversed. The collar, coming first, goes on first; and then, parting the harness with the arms, seize them, face about, and gently place on the horse's back. The collar is already there in place, so we fasten the hames, then the girth, then the crupper, reach for the bridle, unfasten halter, put on bridle, and you are ready for business. This has become a fixed system with me, and you would be surprised to know how much time is saved where you have to harness a number of horses each morning.

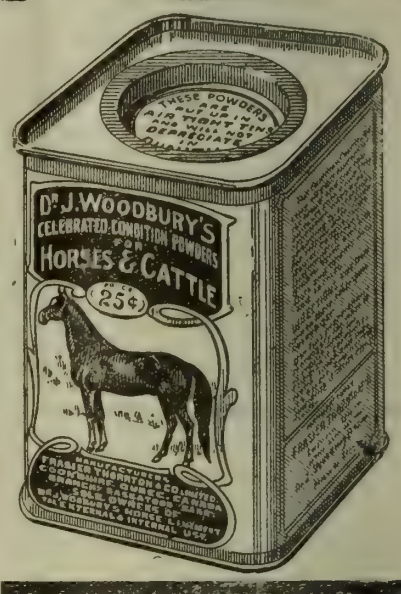
Now, I have seen some people let the horse go direct from the watering to the stall, then go in and unbridle the horse, return and hang it up, then go back to the hames, loose them, remove the collar, return and hang it up, then go back and unfasten the harness, hang them up over the collar, and then return to halter the horse. The result is a great loss of time; besides, your horse may have stepped out of the stall and run to the field. Also, when you want to harness again, your collar is underneath and you have to throw the harness on first and run the chance of the horse slipping them off.—A. V. Priddy.

PREVENT SORE SHOULDERS

The best cure for sore shoulders is prevention. By proper fitting of the collar they can be avoided. Sometimes the shoulders of a fresh horse will scald. I have cured them by bathing with cold water at noon and night, and sprinkling with sulphur after each time. Bathing the shoulders in a solution made by boiling oak bark in soft water will toughten the shoulder and prevent it from scalding.

I raise the collars from the shoulders each time I stop. This allows the shoulder to cool. The best thing I have found for sore shoulders is a mixture composed of two tablespoons sulphur, two tablespoons melted lard, and one teaspoon carbolic acid. Mix and apply the same as any gall cure.—L. Martin.





Doctor Said Sciatica--- Rheumatism---Lumbago

But He Could Not Help Me, and Endorsed the Use of Dr Chase's Kidney-Liver Pills.

Mr. Wm. Parker, 105 Cayuga Street, Brantford, Ont., tells in the following letter of his remarkable experience with Dr. Chase's Kidney-Liver Pills: "My doctor treated me for some time for Sciatica, Rheumatism, Lumbago, but to no purpose, for I had to lay off work. The visiting officer of Sick Benefit called to see me and advised the use of Dr. Chase's Kidney-Liver Pills, stating that he had been cured of the same trouble for their use. I asked the druggist about them and he recommended them highly. Not being satisfied with this, I went back to my doctor, and when he said they were good I began their use. The promptness with which they enlivened the action of the kidneys and bowels was wonderful, and it was not long before I was rid of all my trouble.

"I was so bad that I could only walk by hanging on to a chair or the wall. My wife had to lace my shoes. Only those who have had this ailment can realize the way I suffered. I am writing this letter to let people who have my trouble know of these pills. You are at liberty to use this letter, and if anyone interested will call or write to me I will give every detail."

Write to Mr. Parker, enclosing stamp for reply, and he will verify this statement. He will do this out of the gratitude he feels for his cure and because he realizes how difficult it is to obtain the cure of these dreadfully painful ailments.

There are so many treatments recommended for rheumatism that you naturally doubt them all. Here is an opportunity for you to verify the cure and put this great medicine to the test. It will only cost you a quarter to try Dr. Chase's Kidney-Liver Pills. They get at the very foundation of rheumatism, and by removing the poisons from the system take away the cause of pains and aches.

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25 cents a box, all dealers, or Edmanson, Bates & Co., Limited, Toronto.

KEEP THE BOWELS REGULAR AND AVOID CONSTIPATION.

When the bowels are not kept regular they become clogged up with waste and poisonous matter, causing constipation, biliousness, sick headaches, piles, and all kinds of liver troubles.

Milburn's Laxa-Liver Pills will regulate the bowels so that you may have a free and easy motion every day. One pill every night for thirty days will cure the worst cases of constipation.

Mr. John J. Smith, Elginburg, Ont., writes: "I had been troubled for a great while with constipation, and tried many different remedies which did me no good. I happened to try Milburn's Laxa-Liver Pills, and I have found them most beneficial."

Milburn's Laxa-Liver Pills are 25 cents per vial, or five vials for $1.00; for sale at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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Made of our famous Oil-Tanned Skowhegan waterproof leather; they have waterproof sole-leather outsoles and solid insoles. The soles, too, are attached by an improved clincher fastener process. They are staunch, light-weight working shoes for spring, summer and fall. Your dealer will likely have them; if not, write us, giving his name and address.

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You ought to be certain that only the best Materials are used in the manufacture of the

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you instal from time to time. There are innumerable chances for serious and costly accidents when so-called "bargain" goods are used.

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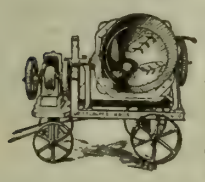

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POULTRY

BRINGING PULLETS TO MATURITY

To reduce the work of caring for the pullets, we use an inexpensive drinking fountain attached to a large barreled tank which contains enough water for the whole flock for several days and saves the constant attention given to numerous small foundtains. The brooder houses are supplied with slatted doors through which the chicks can pass readily, but which exclude the hens. In each house is placed a generous hopper of grain, another for dry mash, and a smaller one is divided for charcoal and grit.

The hoppers are filled with a grain mixture and mash, and are never allowed to become empty, except when there is a tendency to waste the food. Sometimes the fowls scatter the grain over the floor in hunting for favorite kernels; in that case we leave the hoppers unfilled until they have cleaned up the grain. Once each day they are given a crumbly mash made by wetting the dry mash with sour milk. The sour milk dish is kept full. The method of using a large fountain tank and hoppers reduces the work markedly.

When the brooder houses are opened early in the morning every chick rushes out, and the flock is soon scattered far and wide in search of the proverbally early worm. It is late in the forenoon before they return to their hoppers. After having eaten their evening fill at the hoppers they forage as long as they can see. The fact that seemingly limitless food is always before them does not affect their activity. The pullets eat quite an astonishing amount of food, but show the result by the time they are put into laying quarters in the fall.

The cockerels are separated from the flock as soon as distinguishable, and are confined to quarters to be sold as soon as possible. It is the pullets only which are given free range and the hopper feeding. Our pullets are strong and vigorous, and are laying well by the time they are six months old. Since results are so good, we take kindly to this easy way of breeding them to maturity. When compared to feeding and watering them three times each day, the pullets seem almost to have raised themselves.—A. M. A., in New England Homestead.

SIZE AND SHAPE OF EGGS

The size of the hen has little or no influence on the size of an egg. A four-pound hen may lay the same size egg as an eight-pound hen. The eggs of the different breeds in the national contest in Missouri varied in weight from 2.03 ounces to 2.29 ounces, while the hens themselves averaged in weight from 3.12 pounds to 6.36 pounds. Strange as it may seem, the hens whose eggs averaged 2.03 ounces weighed 5.75 pounds, while the ones whose eggs averaged 2.29 ounces averaged only 3.4 pounds each.

After studying the poultry business from every angle, one recognizes the fact that the size and shape of an egg are the two things all breeders can work for, for they are the only things in common with all breeds and varieties.

An ideal egg should be an oblong oval slightly tapering from one end to the other, and should weigh 2 1-6 ounces, or 26 ounces to the dozen. Egg markets require them to weigh at least 24 ounces. Eggs of this size and shape are the correct size to fill the standard egg case filler, and if incubated will give better results than where various sizes and shapes are incubated together.

The old idea that round eggs hatch pullets and the long eggs hatch cockerels is incorrect, for a hen lays uniformly shaped eggs regularly, which hatch approximately an equal number of cockerels and pullets. Nothing can be told from the size and shape of an egg—whether it is fertile or infertile, or whether it would hatch a cockerel or a pullet; but the shape of an egg is a characteristic which is transmitted to the offspring. Therefore, use as breeders only the hens which produce eggs of correct size and shape. —C. T. Patterson.

TREATMENT OF SCALY LEGS

This common affliction, which is familiar to all poultry keepers, is caused by a minute mite which lives and breeds under the scales of the feet and legs. It is easily recognized in the enlarged, roughened appearance it gives the foot and shank. Each fowl must be treated individually to cure the disease.

In a new book on poultry diseases Dr. Raymond Pearl says one of the very best cures for scaly legs is oil of caraway. This is best applied in an ointment made of one part of oil of caraway to five parts of white vaseline. It is very penetrating, but is not nearly as irritating as some of the commoner treatments more usually advised. The ointment should be rubbed into the leg and foot every few days until all signs of the disease disappear.

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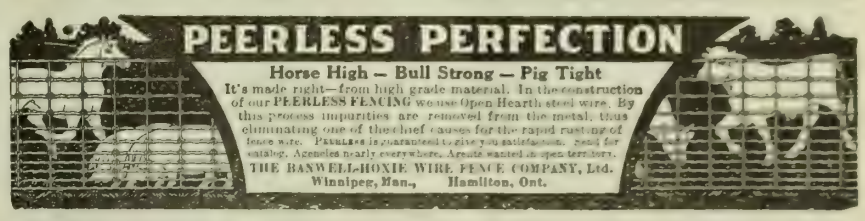
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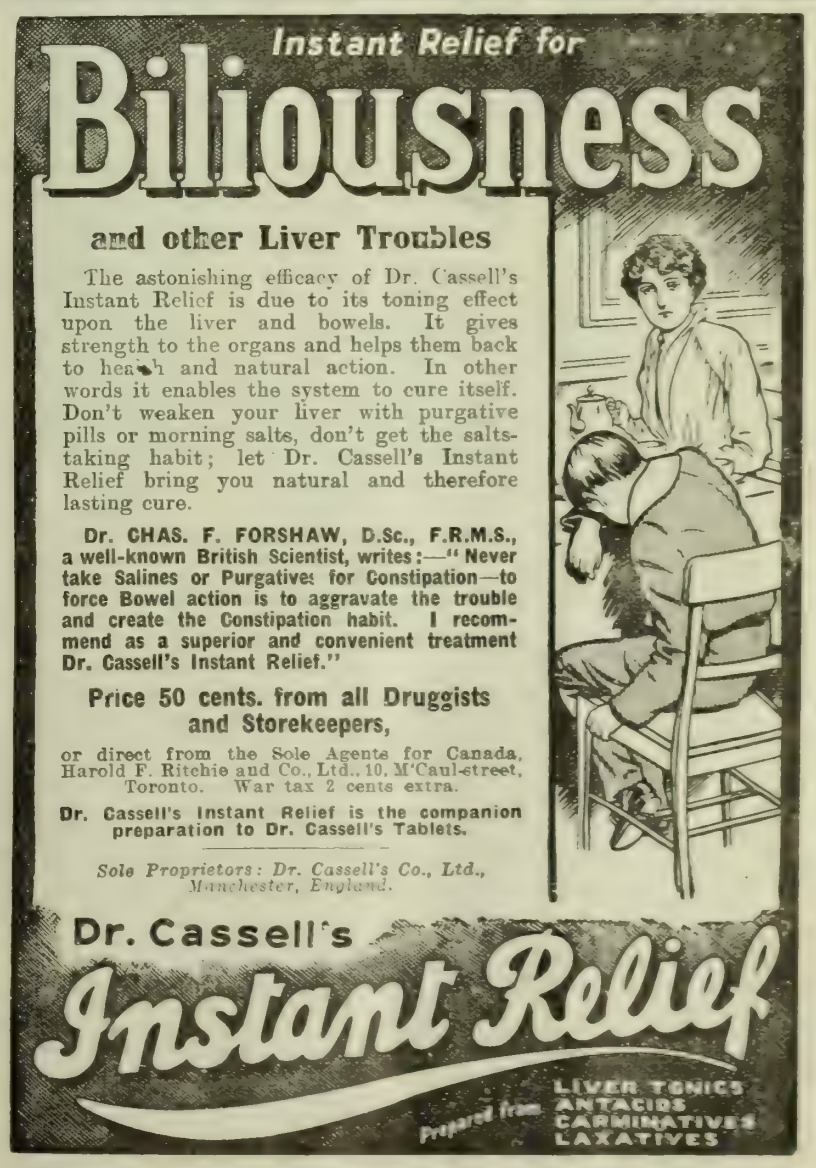
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Dr. CHAS. F. FORSHAW, D.Sc., F.R.M.S., a well-known British Scientist, writes:—"Never take Salines or Purgatives for Constipation—to force Bowel action is to aggravate the trouble and create the Constipation habit. I recommend as a superior and convenient treatment Dr. Cassell's Instant Relief."
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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

AN INDEPENDENCE DAY EVENT THAT TURNED MOURNING INTO REJOICING

By Anna C. Chamberlain

If there was one trait above all others for which Aunt Martha Willets was renowned throughout the neighborhood, it was for her forehandedness. Under her vigorous household regime there was no putting off till tomorrow—indoors, at least—what might be done today.

To easy-going Uncle Ephriam, who preferred the reverse maxim, "Never do today what you might just as well put off till tomorrow," this stern rule sometimes seemed oppressive.

"Ta' ain't a bridge across the Stream o' Time I don't have to cross miles 'fore I come to it, Marthy," he expostulated. "It don't show much trust and confidence in a good Lord to be always preparing ourselves ag'in' a day of trouble. Get my plow and cultivator under cover for fear it might rain? Time enough to get 'em in when it does rain. I'd be ashamed not to trust in Providence a little bit."

So Uncle Ephriam would go his happy-go-lucky way, while his painstaking spouse, her weather eye ever to windward, did her fall cleaning in the dog days, and took other precautions far in advance, for fear she might be hindered when the proper time came.

Knowing this busy forehandedness of her next-door neighbor, Miss Polly Ford, running across lots early on a Fourth of July morning, was not surprised on entering Aunt Martha's sunny kitchen to find the breakfast things all cleared away and the room deserted. Sounds of vigorous movement above stairs indicated the whereabouts of the usual occupants. Doubtless Aunt Martha was making some preliminary movements toward fall cleaning.

With the freedom of a near neighbor and a lifelong acquaintance, Miss Polly stepped into the hall and called. In prompt answer Aunt Martha's large silver-rimmed glasses peered down over the banister.

"Set ye down in the kitchen," called a hospitable voice from behind their shining ovals. "I'll be right down."

"I was a-fixin' to run into town," continued the same voice a moment later, as Aunt Martha arrived breathless by way of the back stairs. "Tim Follet, him that used to own this farm, is aiming to move from his place in the city to the far west. He wrote for that trunk of his grandther's papers we've been a-keepin' for him so long."

"Tim Follet going to move again!" commented Miss Polly, with surprised emphasis, for it was only about twenty years since Tim had moved from their midst into the city. In the minds of settled country folk such restlessness savored of light-minded frivolity.

"So he wrote," returned Aunt Martha. "And I was just a-getting that trunk out of the closet ready to go. If they start Thursday, as they say they're aiming to do, it had ought to get off today to reach them in time."

"Monday, Tuesday, Wednesday," calculated Miss Polly audibly. "That's right, Martha. If them freight companies handle it right, it'll get there. Folks do say they're awful slow. But them express companies is too high to use."

"I've been a-thinking of them things," responded Aunt Martha, "and I've come to the conclusion that I had better go to the city and take the trunk with me for baggage. It won't cost but my ticket, you see, and I could take a look around at the stores and say good-by to Tim's folks all at one expense. 'Pears to me it would be a neighborly thing to do."

"You'll have to get off on the two o'clock train to make the trip and come back this evening," warned Miss Polly, taking her feet off the footstool where she had comfortably settled them. "In that case I'd better not hinder, without I could help some. I can get the setting of eggs I came after some other day."

"If you could," consented Aunt Martha gratefully. "No, I don't need any help, unless if you see Jack Martin you could ask him to stop and carry so late Ephriam thought he couldn't me and the trunk over to the depot right after dinner. I settled on going change his plan about going to the sale. He's buyer for the grange, you know. So he promised to tell Seth Wood, that rents out eighty down below, to drive over for me. But I don't feel no certainty that he'd remember. Men are so terrible uncertain."

"That's so," assented Miss Polly fervently. She spoke from the depths of a knowledge gained second hand from the repeated testimony of many married friends, Miss Polly and her sister having dwelt in an Adamless Eden for more than forty uneventful years. "Like as not if Ephriam did remember, Seth would forget, or come too late for the train."

"So I was fearing," returned Aunt Martha, following her departing visitor to the door, "and for that very reason, when I haw Caspar Ray passing on his way to his lower farm, I went down to the gate and hailed him. As luck would have it, he may have an errand to town right after dinner; but in case he doesn't, he's going to speak to 'Lias Graves and see what he can do; so if none of those others come I might ride over with one of these. It's just as well to have an anchor to windward, you know."

"But you aren't right sure of any one of 'em, are you?" doubted Miss Polly, drawing the strings of her brown chambray sunbonnet close under her chin as she went down the back steps."

"That's the worst of it." Aunt Martha accompanied her informal guest toward the back gate to gain opportunity to further unburden her mind. "That's why I told John Burton about it when he came to borrow our hay fork a little while ago, and he says he's most sure that his father is going to the blacksmith's right after dinner, and he'll ask him to stop in. Still, when I got to thinking about it after he left, it did not give me what you'd call a positive chance, so I hailed Tommy Barker, who was passing on the highway, and told him I'd give him fifty cents if he'd either come himself or find some one else to come and take me over. I guess that's about the best chance I've found yet," concluded Aunt Martha as they reached the gate into the pasture. "Tommy don't come across fifty cents every day."

"That he don't," agreed Miss Polly without reservation; "and he'll be apt to hustle around right lively to find you some one. Shouldn't be surprised if he got you several, if he didn't forget. But, just to be on the safe side, I'll speak to Jack Martin, if you like, and I can find him."

Wth this promise Miss Polly took an affectionate leave of her friend. "In case you get off," she explained; and then speeded away on a longer walk home, around by Jack Martin's, on her errand of friendship and good will.

As ill luck would have it, Jack was not at home.

"There's no telling just where he is," speculated the jaded-looking wife of the good-natured ne'er-do-well. "What with the work he ought to be doing, and the tools he has to borrow to do it with, I never can tell. He may be down to Eby's borrowin' their harrow, or over to Jackson's for the loan of their planter; but he'd admire to take Mis' Willets over to town if he's back in time. In case he shouldn't be, I might speak to Zeke Daniels when he passes on his way home to dinner."

"So do," returned Miss Polly heartily, for Zeke was well known as a generous, kindly man who was ready to help a neighbor at any time. "In case he isn't sure, you might send your little boy down to Williams' to see if Thomas could be spared to do it, and he might see the Jimsons just to make things more certain. Be sure they all understand she must get that 2 o'clock train."

"I won't forget," promised Mrs. Martin. "Betwixt the four them, they'd ought to get it done."

"Surely," agreed the maiden lady; but she was little disturbed at not seeing one of the principals in the part of conveying her friend. Merely leaving word seemed to allow the matter to remain in a state of uncomfortable indecision.

She was vaguely uneasy about her method of executing the important commission confided to her. For that reason she was pleased and relieved when, just before turning into her own gateway, she saw Ebenezer Jordan driving toward her on a brisk trot.

"You're just the person I wanted to see," she called, as he drew near. "Aunt Martha Willets has to go to town today to see Follet's folks off for the west. She wants to take a trunk they left stored in the old house. Uncle Ephriam had to go to the sale today, so she's looking for some one to carry her and the trunk to the train."

"Looks if Ephriam had ought to find time to wait on his own wife," wheezed Ebenezer, holding in his restive team reluctantly. He was afflicted with asthma, and hated to talk when his spells were on.

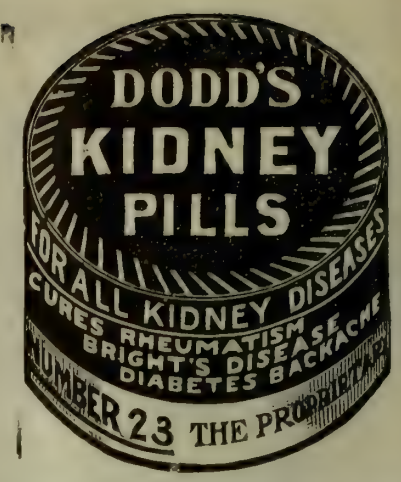
"Does look so," agreed Polly, "but he's gone, and she's wanting somebody to get her over to that two o'clock train. It just struck me that there wasn't a person in this district had such a fine dependable team as you have," concluded Miss Polly, remembering Ebenezer's pride in his horses.

"Course I could," admitted Ebenezer, swallowing the bait, "if I wasn't wheezing; and maybe I won't be if I go right home and take my medicine. I'll hurry along and see," and Ebenezer's buggy whirled on, leaving Miss Polly quite as uncertain as ever.

"Of course they's several that may come," she told her younger and more practical sister Hannah, when she had reached home and laid the perplexing situation before her. "But every last one of them is a man, and you know just how much you can depend on them. Besides, not one of them, so far as I can hear, has bound himself by a full promise. As like as not Martha will be disappointed in spite of the whole bunch of them."

"Unless you was to hitch our Pellipeann to the phaeton and take her yourself," suggested Hannah from the buttery. "Seems as if it would be only Christian like to do it, too. I'd hate to be left to depend on the uncertain mercies of any man."

"I'll do that very thing," declared Miss Polly, losing her look of anxiety on the instant. "I'll feed Pellipeann right away, so's I can get off the first thing after dinner."



"And I'll start dinner real early," returned Hannah. "We can eat about eleven, so as to give you plenty of time to dress and get off by one o'clock."

This arrangement seemed satisfactory to Miss Polly, who proceeded to feed the horse at once, though it was but ten o'clock, and then to begin the various preparations which always seemed a necessary accompaniment to a trip to town.

All this kept both sisters so intent that they took no account of the events which might be taking place in the surrounding neighborhood. It was not till Miss Polly had dressed herself in her second-best suit and hitched their ancient steed to the little phaeton that she felt a reviving interest in matters outside her immediate vicinity.

When she finally clambered into the rickety vehicle, with a mind and vision free to take note of the happenings of the neighborhood, she observed a most extraordinary state of affairs.

She was just reaching to take the lines which Hannah held toward her, when, instead, she gripped her sister's

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arm with the strength of amazement and dismay.

"Look! Look yonder, Hannah," she gasped, "and tell me what you make of it."

Hannah looked in the direction indicated, her eyes widening with surprise and fright.

The Ford sisters lived next the corner of section thirty-one on the side next the town. Their house was built on the highest knoll in the vicinity, and commanded a perfect view of the Willets home, which was situated around the next corner on the lower road.

As they looked across upon their neighbor's house from the vantage ground which they occupied, they could see coming to it from all directions teams and teams and teams. There were surreys, phaetons, carryalls, road wagons, and carts.

"What do you suppose has happened?" Miss Polly spoke through white lips, which could barely articulate the words.

Hannah, with blanched cheeks, could scarcely form the reply.

"Accident! seizure!" she mouthed inaudibly, and dinner dishes and household cares forgotten, she rolled her portly form into the phaeton beside her sister.

"She looked all right when I saw her this morning," moaned Miss Polly, pulling hard on the wrong line.

"You never can tell." Hannah took the reins into her own more cap ble hads and turned toward the gate in a wide circle. "In the midst of life we are in death," she continued, when Pellipeann was fairly started toward the gate; "only I hope it ain't that bad."

For the second time that morning Miss Polly seized her sister's arm with a grip of painful intensity.

"Look!" she cried. "Look!"

Ahead of them they saw Ephriam Willets coming down the road, driving at a breakneck pace. Every now and then he leaned forward to urge his already racing team to greater efforts, while his eyes were fixed on the convocation of teams which were gathering toward his home.

As the Ford vehicle turned into the highway his team slackened somewhat to accommodate the amble of Pellipeann.

"Girls," he cried hoarsely "what's happened there?" pointing his whip in the direction of his own home with a hand which shook as with palsy.

"We don't know," returned Hannah, shaking her head to make the denial intelligible above the rattle of the speeding vehicles.

"And I wouldn't stop to take her to town—went to a sale instead." Ephriam's stiff white lips curved to a grin of ghastly sarcasm. Then he lashed his horses to a furious speed, leaving Pellipeann and her burden far behind.

"Land, but he looks terrible!" confided Miss Polly to her sister, not knowing that she spoke in a whisper which the jar of the buggy rendered quite inaudible.

Hannah nodded assent to the words she could not understand, and urged the ancient steed to more strenuous efforts.

By this meas they came in time to the tail end of the seemingly endless stream of vehicles which were winding on toward the Willets residence.

"How'd it happen?" asked the occupant of the first one they reached.

It was Zeke Daniels. He was driving his plow team hitched toa dusty road wagon. Just in front of him Ebenezer's trim Morgans trotted. From Ebenezer's tense attitude and purple ears, it could be seen that he was still wheezing. Beyond him the non-committal backs of the vehicles yielded up no tales of their occupants.

Miss Polly shook her head. It seemed to her that speech was impossible. Hannah answered instead.

"We don't know any more than you do," she said in a hushed voice. "My sister was over there bofer nine o'clock this morning, and Aunt Martha seemed the same as usual. She must have been taken very suddenly."

"Fixing to go to town, too, wasn't she?" continued Zeke. "Mis' Martin she told me she was. Said if I'd happen along this way to take her over, it'd be a favor. Looka there, will you?" he finished suddenly, pointing with his whip at something which had just sprung into sight far to the west. "A hearse, ain't it? Now, that's a little too sudden."

"It's one of those there motor cars," corrected Hannah, looking long and carefully. "A covered one. Likely as not it's a doctor they've sent for.

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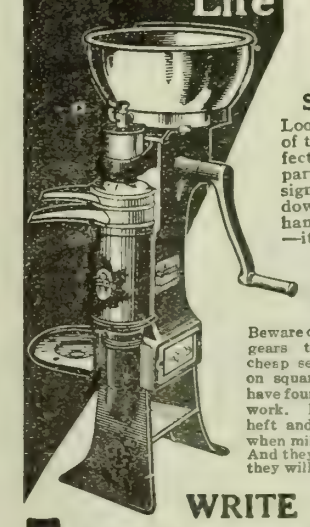

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'Tain't likely she's—she's—gone yet."

"Well, I aim to get there ahead of that there thing if I spoil the hull procession," exclaimed Zeke, speeding up with sudden vigor.

Every one else seemed all at once seized with the same ambition, and shortly they began to arrive and turn in or tie before the Willets home.

Everything was still about the house. They had expected that. The shades were down, and the door decorously closed. That was only natural. But they had not expected to find Uncle Ephriam standing in dazed fashion on the doorstep, looking in bewilderment from the crowd of sympathizers to the closed door.

Miss Polly, with the familiarity of near neighbor, alighted and pressed forward through the gathering.

Low-voiced comments floated to her ear.

"Dod they telephone to your folks?"

"Well, no. Fact is, I didn't know a thing about this till I got here. I come to carry Mis' Willets over to the station. She asked me herself this morning."

"Queer! I had that in mind, too. Seth Wood asked me to come. Ephriam had asked him, and it 'peared he wasn't sure of being able. That's why he asked me; but I see Seth's made out to come, and his wife, too."

"Oh, anybody would come in a case like this."

Miss Polly pushed on, but the murmurs followed:

"How'd it happen?"

"I really didn't hear. Fact is, I didn't know a thing till just now. You might have knocked me down wirh a feather. I came a-specting to carry her over to the station. Ephriam spoke to me about it on the way over to the sale, and me and my wife came right over."

"Mis' Martin asked me to come over for that same reason. It seems that she wasn't sure Jack could go. I see they've made out to come for this."

Miss Polly pressed on up to the door.

"Who's caring for her, Ephriam?" she asked in a tense whisper.

The old man turned startled eyes upon her.

"I—I—don't know," he faltered. "I —I can't get in."

Miss Polly thrust deft fingers under the accustomed doormat and produced the key, which Ephriam, moving like one in a dream, thrust into the lock and turned. Then together they entered.

A deathly hush lay over the darkened interior, broken only by the complaining drone of a distant lonely fly.

"Where's she gone?" demanded Ephriam of the leaders of the crowd which pushed in after him. "Where'd they take her?"

"I don't know." Hank Burton looked pityingly at the bewildered face of his neighbor. "I came aimin' to carry her to the village. Did you hear anything, Jake?" He referred to his nearest neighbor, and one by one the question was passed to those without.

"The ambulance!" was wafted back, and again there was a surge of the company, this time toward the outside, where they saw a large motor car glide into the yard.

"The ambulance, Ephriam," soothed Miss Polly, unconscious of the tears which traced their way down her own cheeks. "Now we'll know where she's been taken."

But the glittering exterior of the great car, radiant in its newness of enamel and nickel plate, yielded up no corps of dignified doctor and uniformed nurse.

Instead, the familiar and rather sheepish face of Tim Follet was thrust from its depths.

"Why, 'ello, folks!" he saluted in some embarrassment. "Come to give me a send-off? To tell the truth, I give up going west. Put the money into a car instead. Funny you all found out I was a-coming."

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"We didn't," returned Caspar Ray; and something in his sepulchral voice changed the sheepish grin on Tim's face to an expression of concern and alarm.

"You don't mean to tell me that Aunt Martha's been took?" he exclaimed in an awed whisper. "Land, but it must have been sudden! I wrote her a letter just yesterday. How'd she go?"

"Can't nobody seem to tell." Zed Harmon edged his way through the crowd to add his meager mite of information to the little the others had to convey. "Some think she was took in the ambulance, but they ain't sure, for she was all alone when it happened."

"You don't mean to say—" began the newcomer, looking amazedly from one lugubrious countenance to the one next it. "What I want to know is—"

The knowledge which he sought was destined to be withheld, at least for a time. At that moment the general attention was diverted by the sound of clattering tins, which rang out discordantly above the solemn murmur of hushed, awe-stricken voices.

"Such a time to be drivin' up in his old peddling wagon!" commented Mrs. Jackson severely, as a gaily painted peddler's cart, flashing its bright wares from top and sides, rattled into the yard.

It did not stop decorously on the outskirts of the serious assembly into which it had unwittingly intruded, but wound its glittering way unabashed up the curved driveway to the very portals of the silent house.

"Land, but I'm glad to get back!" remarked a well-known voice from beneath its gaudy canopy. And there, surrounded with a radiant aureole of gleaming pails and pans and mixing bowls, her mouring friends looked and beheld the lost—the late-lamented Aunt Martha!

"Where you been, Martha, leaving me like this?" hoarsely demanded her husband, holding up trembling hands to help her from her resplendent equipage.

"Been to the station, like I said I would," returned the truant, without emotion. "Land, Ephriam, but you do look fussed up! Comes of going to sales and not getting your meals regu lar."

At this light, not to say flippant, remark from one whose seizure or sudden death the whole assemblage had been interrupted in the act of mourning, Ephriam's face showed signs of sudden and violent agitation. Its color changed from white to a red which increased to an almost apoplectic hue. Unnerved by this abrupt change in his mental attitude, the flood of tender regrets with which he had just been overwhelmed, curled all at once, and burst forth in a torrent of unreasoning anger.

"A pretty way to act!" he stormed wrathfully. "A-sending word to every man in the hull community to come and carry you to town, and then to go gallivanting in a red peddling wagon! Here you been and left the entire neighborhood to ball itself up into a funeral for you. And even the corpse was missin!" concluded Ephriam, in a tone of one who detailed the very climax of accumulative wrongs.

Aunt Martha gazed for a moment at the congregation of vehicles which congested the highway outside their own gate; at the convocation of inquiring faces which looked at her from the farthest reaches of her own front lawn.

If a twinkle appeared in the gray eyes back of the silver-bowed spectacles, Miss Polly was not near enough to see it, but she plainly discerned a quivering of the broad shoulders beneath the best black sateen waist.

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When Aunt Martha at last spoke, it was in tones of stern placidity.

"You're no Turk, Ephraim Willets," she answered firmly, "to want to keep your women folks housed up all the time you're away from home; and I'm no Turk, either, to stand it if you did. As for my going off in a peddling wagon," the wood woman's voice rang a stronger note of independece, befitting the day, "I seemingly had to go to town, and I went with the first man in a two days' search who know where he was going and when he was going to start. It wasn't his fault that the pressing demands of the tin trade caused us to miss the train. If, as you say, all this pretty company gathered for the sole purpose of carrying me to town"—again there was an agitation of the sateen shoulders—"I am sure it was right handsome and neighborly of every one of them. As long as Tim Follet has come for an outing in his new dufunny, it's just as well they did. Now, if all the men folks will find places to sit down," Aunt Martha included the whole gathering in one comprehensive gesture, "and the women will follow me, I reckon we can find tea and victuals to turn this mourning assembly you spoke of into a real Fourth of July picnic."

With this effective conclusion, Aunt Martha's person made a majestic entrance into the shadows of her home.

Many a can after attaining a high position in life forgets all about the laws of gravity until it is everlastingly too late.

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Strong bleaches must never be used on fine table linen. Of course table linen is often badly spotted and needs to be cleansed in some way. But boiling water removes coffee spots, cold water removes cocoa spots, and sunshine removes many stains. When stronger acids must be used they should be applied and removed by intelligent hands.

They should be allowed to remain on the spots just long enough to eradicate them, and then rinsed out thoroughly in clear water. For if they remain on too long they remove not only the stain but the pieces of linen.

Some old-fashioned housewives occasionally have their table linen dipped in buttermilk to whiten it. The linen is allowed to remain in the buttermilk a day or two if necessary, and is then thoroughly rinsed in cool, clear water, later in warmer water.

For fruit stains, pour boiling water through them while the stains are damp, if possible. If they dry on, rub them with lard and put through the usual washing process.

Always dry table linen out of doors in the sunshine. If possible have a little bleaching green of grass, protected from the inroads of coats and dogs.

Perhaps every woman at one time or another finds that some wet pieces in her soiled laundry bag have caused mildew among the clothes.

To remove this, rub the spots with soap and cover them with chalk. Then put them in the grass in the sun. Keep it slightly damp for an hour or two, and then let it dry thoroughly.

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Prize Lists are now out, and persons not receiving same can have them mailed by writing the Secretary:

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Halifax

"Dad, what is a roost?" asked Charlie.

"A roost, my son, is a pole upon which chickens sit at night," replied his father.

"And what's a perch, dad?"

"A perch is what chickens perch on."

"Then I suppose, dad, a chicken could roost on a perch?" came the further inquiry.

"Of course," was the smiling reply.

"And they could perch on a roost?"

"Why, y-yes," answered dad.

"But if chickens perched on a roost, that would make the roost a perch, wouldn't it? But, if just after some chickens had perched on a roost and made it a perch, some more chickens came along and roosted on the perch and made it a roost, then the roost would be a perch and the perch would be a roost, and some of the chickens would be perchers and the others would be roosters, and——— Well, there?"

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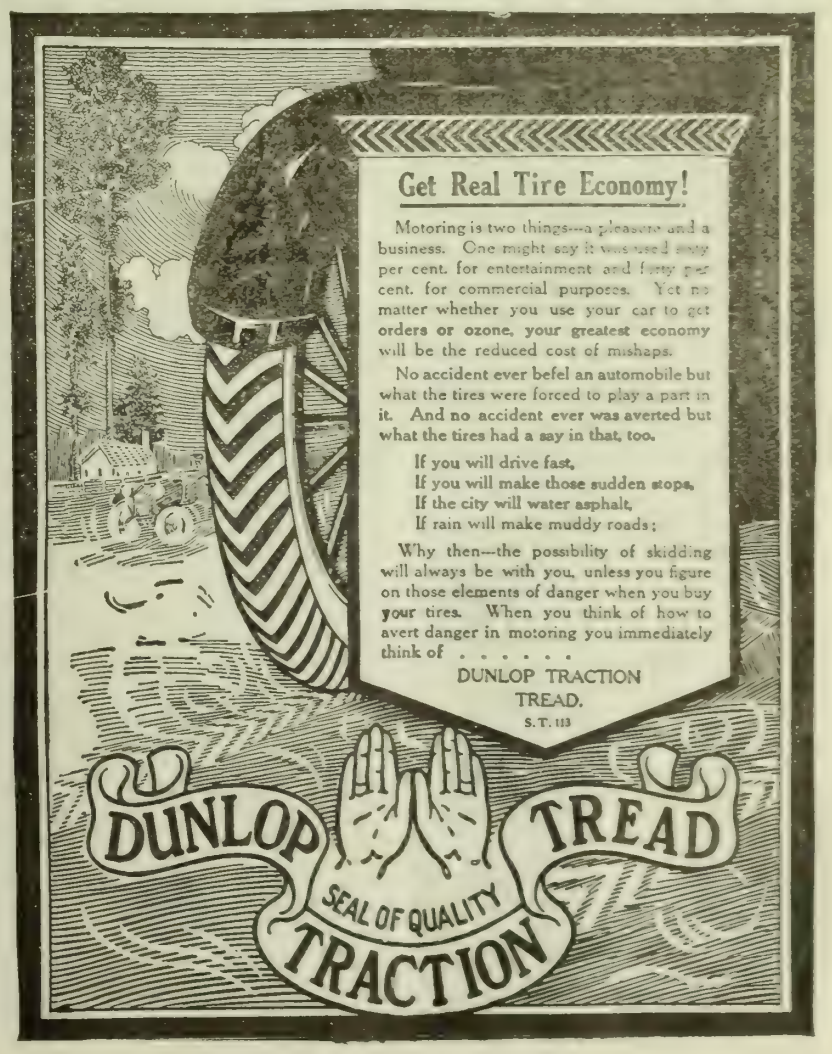
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No accident ever befel an automobile but what the tires were forced to play a part in it. And no accident ever was averted but what the tires had a say in that, too.
If you will drive fast,
If you will make those sudden stops,
If the city will water asphalt,
If rain will make muddy roads;
Why then—the possibility of skidding will always be with you, unless you figure on those elements of danger when you buy your tires. When you think of how to avert danger in motoring you immediately think of . . . . . .
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CONTROL POTATO DISEASES BY PRACTICAL SCIENCE

(Continued from page 629)

and kept in separate covered barrels throughout the spraying season.

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In order to prevent the very evident loss by disease, it will be necessary for the farmer to follow the lines here laid down for the elimination of diseases, when it will be reasonable to expect that the diseases be eventually exterminated or reduced to a minimum. Any objections a farmer may have to carrying out the preventative suggested in this article will disappear when he finds from experience that their observance results in a greatly increased yield and higher profits to himself.

THE COLLEGE WHICH SAVED OUR LIVE STOCK

Of all the colleges which have been founded and have flourished in Ontario none has met with greater difficulties in becoming established nor have vindicated more fully their usefulness and importance than those two catering most directly to the needs of the farmer—the Ontario Agricultural College and the Ontario Veterinary College. Of the former much has been said in way of explanation and appreciation in the farm journals. But of the good services of the latter not so much has been written and probably by many are not so well understood. In any number of an agricultural journal devoted to educatioal facilities for the farmer and to education that vitally affects his business the work of this important institution should have a place. Its value to the agricultural interests of Ontario, and indeed to those of the entire Dominion, cannot well be overemphasized.

Far back in the history of the province, as development is measured, but not so distant as years go, the veterinary surgeon was pretty much an unknown quantiyt. In the memory of many still living his place was occupied by the "horse doctor," a man of rough skill, perhaps, but no science. In those days every horseshoer was a "horse doctor," of parts, while few indeed ever attempted to make a living by the practice alone. In some measure every farmer was also a veterinarian, administering such medicines and applying such remedies as were at hand, each having his own cures, secret or otherwise, and each entirely convinced that his own were the best.

A New Era for Ontario

It was natural, of course, that these conditions should exist in a new country sparsely settled and with little live stock. But toward the middle of the past century it became clearly evident that a new day was dawning for Upper Canada (as Ontario was then called), and with it must be established a new order. As far back as 1833 an extensive importation of stock had been brought in by a farmer, Rowland Wingfield, living near Guelph, Ontario. Others followed, until large numbers were in the province. Then the owners found themselves confronting a grave problem. When any of their stock became stricken with a serious or a contagious disease they were at a loss to prevent its recurrence or spread themselves, and had no one to whom to turn for skilled assistance or advice.

Thus was the college founded through great need, although, if the truth be told, not a need always felt by some of those most vitally affected; even at a later date the need for a college of agriculture was not realized too generously by the agriculturists, who stood to gain the most from its services. The idea of scientific agricultural knowledge was new in those days; that was the root of the trouble perhaps.

The Man of Destiny

Now, while matters were thus reaching a head, a young Scot, by the name of Andrew Smith, was forming a vision of the greater Canada that was to be developed from the land of his adoption. He had faith in it and faith in himself—that combination of qualities that makes of the young man a force which will not be denied. With keen foresight he saw the possibilities for the qualified veterinarian in Canada, and returned to his native land to take the course of studies prescribed by the pioneer British veterinary school in Edinburgh.

Meanwhile men of rank and influence were bestirring themselves in Upper Canada to rectify the deplorable condition of affairs already described. The Board of Agriculture, which had been organized to promote agricultural shows, succeeded in having agriculture made a subject of study in University College, Toronto, George Buckland being made professor. It was then deicded that nothing of more importance to agriculture could be done than to secure a capable veterinarian who could train students in matters pertaining to the science. Accordingly Professor Buckland crossed the Atlantic in 1861 to consult Professor Dick, Principal of the Edinburgh Veterinary College, regarding a suitable man.

And this was the chance Andrew Smith, the man of faith, had been building upon. He had recognized the knock of opportunity and had prepared himself. So when he was recommended by Professor Dick he accepted the position and returned to Toronto to establish the first veterinary college to be founded in Canada, and one of the first upon the North American continent.

Since that time the wonderful development of Ontario's live stock interests has been intimately connected with the growth of the O. V. C. The year it was established this province had a total of 113,647 horses and 504,963 cattle. In the 1914 report of the Ontario Department of Agriculture—the latest issued—Ontario is credited with possessing 774,544 head of horses and 2,604,628 head of cattle, while live stock holdings of all kinds are valued at the great sum of $250,870,078. Thus has the province flourished—and its progress has been made possible by the thousands of graduates of the Veterinary College, who have been very alert to protect our animals from contagion and to stamp out disease which gained entrance.

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Not only that, but the college has, through its students, created a reversal of public opinion regarding the "horse doctor." Rule of thumb and the practices of the quack have given way to scientific accuracy. All the sciences relating to the prevention and cure of disease and to surgery have their place in veterinary theory and practive even as they have in human medicine and surgery. The old-time trade, or worse, has become a learned profession in which educated and respected men do a vitally necessary part of the world's work and which is duly appreciated. Today the standing of the graduate of the Ontario Veterinary College is second to no graduate of any veterinary college in North America. Indeed, in many states he is given preference.

Slow Development at First

But this development was not a thing of a day, naturally enough. It took time. In 1862 the first course of lectures was given by Professor Smith, while the second course in 1863 was for the first time advertised as being under the auspices of the Upper Canada Veterinary College. The first three students were graduated in 1866. And so the work proceeded slowly. The college was privately owned and had hard work to bring public opinion to its support. Gradually it won ground, until in 1889 a new building was provided because of the increased number of students.

But it is not the purpose of this sketch to burden the reader with the details of the growth of the college. Suffice it to say that in 1908 the institution was taken over by the Ontario Government and in 1914 the present building was constructed. It is situated on University Avenue, near Queen's Park and is completely equipped in every particular. It is particularly well lighted, heated, and ventilated, and imposing in appearance—is a credit to the government.

The college has been affiliated since 1897 with the University of Toronto, and by that institution the higher degrees of Bachelor of Veterinary Science and Doctor of Veterinary Science are conferred. The degree of Veterinary Surgeon is conferred upon three-year graduates by the college. Dr. E. A. A. Grange, of the class of 1873, long engaged in teaching and research work, and a man of continental reputation, has been principal since 1908. Sanitary inspection and the development of science generally has made necessary the placing of additional subjects upon the curriculum in recent years, which in turn made imperative a three-year course of study for the V. S. degree. The standard now is very high, and the graduates are among the most efficient of the profession.

Ontario Farmers Appreciate Course

How Ontario farmers have appreciated its worth—for the majority of students come from farm homes—is forcibly shown by the greatly increased attendance. In years gone by some 60 per cent of the students came from foreign lands, the other 40 being recruited from all parts of Canada. Of the 190 students who wrote examinations this spring, 80 came from Ontario, 59 from other Canadian provinces, and 51 from foreign lands. And these figures do not tell the whole story. For the great war has spoken to the O. V. C. as it has to every college in Canada. It has sent its quota to the firing line in the battle for liberty and human democracy. Already the honor roll totals nearly a hundred —and the end is not yet. In war as in peace the college is doing its bit. We may rest assured that, at home or abroad, the "grads" will not fail. They are true Canadians.

TUNING UP THE MOWER

Just because the old mower pulls hard, has excessive sidedraft, breaks knives continually, or has a badly worn beveled pinion on the crank shaft is no reason why the whole machine should be consigned to the scrap heap and $45 laid out to replace it. No farm machine suffers more from misadjustment than the mower, and the situation is the more to be wondered at because the old mower can be so easily put into excellent cutting condition. With slight expense for a few new parts, and with a little care in adjusting the old parts, the working qualities of the old mower can be made nearly as good as new, and the cost of a new frame, new wheels, and new shafts thus avoided.

The causes for heavy draft are poor lubrication, dull sickles, sidedraft, and non-alignment. The remedies for the first two causes are obvious. Sidedraft is caused by misadjustment of the cutter bar parts, which results in some of the grass being crushed and pulled off as the mower advances instead of all of the stems being quickly and easily cut off as the knife reciprocates. If the cutter bar cannot cut the stems off quickly and easily the grass will pull back upon the bar as it moves forward, causing undue re-

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sistance well to one side of the true line of pull, and what is commonly known as sidedraft results.

The cutter bar of the mower is nothing more or less than a series of shears. We are well aware of how a pair of scissors will bind cloth between the blades and work very hard if the scissors are loose. By tightening the screw which holds the blades together the scissors can be made to cut the cloth cleanly instead of wedging it in between the shearing edges. The same principle is found in the cutter bar of the mower. The knife sections are one set of shearing edges; the ledger plates in the guards are the other set of shearing edges; and the clips correspond to the screw in the scissors, their function being to hold the two sets of cutting blades close enough together so that there will be perfect shearing action instead of a tendency to draw the grass in between the knives and cause objectionable binding and crushing.

Adjusting Cutter Parts

The first requisite for a good cutting condition is that the guards be perfectly in line with one another. If a guard is bent down its ledger plate will be carried away from the corresponding knife section. If a guard is bent up it will force the knives off the ledger plates of the adjacent guards. From the outer end of the cutter bar sight along the under side of the guards and drive back into alignment any guards which are bent up or down. They are malleable.

After the guards have been aligned, carefully examine the knife to see that its sections are held down in close proximity to the ledger plates. Excessive wear on the under side of the lips of the clips will allow the grass to force hte shearing edges apart. On old mowers one can usually slip a silver quarter between any knife section and its ledger plate. Trying to cut hay with such adjustment is like trying to cut cloth with a very loose pair of scissors. If considerable play is found between the knife and the ledger plates, bend down the clips by hitting them gently with a hammer, great care being taken not to bend down any clip enough to cause binding of the knife. It is well to test the knife by moving it by hand after each stroke of the hammer to make sure that binding has not been caused. If the clips are badly worn new ones should be supplied.

The wearing plates found under the clips on most mowers are adjustable, and they should be moved forward sufficiently to prevent excessive lateral play. Badly worn wearing plates will allow the points of the knife sections to raise from the ledger plates even though the clips are properly adjusted to hold down the rear of the knives. Such a condition can be remedied only by supplying new wearing plates, and further clip adjustment should not be attempted. On some mowers a little wearing bar in each guard takes the place of the wearing plate. On such mowers these wearing bars can be reversed when badly worn, and finally replaced at slight expense.

Causes of Sidedraft

In order to cut short, thick, green stuff, operators of old mowers often think that it is necessary to bend down the lips or wings on the guards. Such practice is to be condemned, for besides leading to clogging troubles it is an attempt to effect a remedy without affecting the cause for the trouble. If the cutter bar parts are properly adjusted, as described above to produce perfect cutting action, no difficulty will be experienced in short grass, and there will be no need for bending down the wings of the guards.

Another cause for sidedraft in mowers is noncentering of the knife. When the knife completes its "out" stroke of its "in" stroke it should stop with the center of the knife sections in the center of the guards. If the knife comes to rest with its point between guards the grass between the extreme point of knife and guard will remain uncut until the knife makes a second trip. This will result in uneven stubble and some dragging back on the cutter bar.

Noncentering is often caused by failure to make a new pitman exactly the right length when the repairing is done in the home shop. It may also be caused by excessive strains. Some mowers carry special centering adjustments which force the cutter bar out or in without changing the position of the knife. If no special centering adjustment can be found, centering can usually be accomplished by shortening or lengthening the drag bar, which runs from the balance wheel casting to the yoke to which the cutter bar is hinged.

The advantages of replacing badly nicked ledger plates and knife sections, and of using sharp knives, are obvious. The frequency with which it is necessary to sharpen mower knives can be lessened by keeping the cutter bar parts in their proper relation to each other.—C. O. Reed, Instructor in Field Machinery, University of Illinois.

THE STUMBLING HABIT

The habit of stumbling is natural to some horses, and others acquire this through careless and ignorant treatment by their owners. This is a bad habit from whatever source it comes If it is natural with the horse since colthood, he is a hopeless case. His manner of traveling, when driven may be improved greatly by careful driving. It is best to hold the stumbler with a tight rein and check him up moderately high. In no case abuse the horse for this.

The manner in which a horse is shod has much to do with the stumbling habit. A horse that is shod heavily in front and light behind for a number of times is almost sure to acquire this habit. It may also be the result of weak joints or imperfectly formed legs.

A horse that is badly knee sprung is almost always addicted to stumbling. If this defect is noticeable in the youngster, do not buy him with the intention of his developing into a sound horse. Serious accidents are likely to occur from the stumbling habit. If the animal shows any tendency toward stumbling, see to it that he is properly shod, and use all other means and care of driving, etc., to bring him out of it.—P. A. Anderson.

BREAKING UP BROODY HENS

Before closing up at night I make the rounds of the houses and take in charge all hens found on the nests. The broodies are placed in a small house that is bare of all furnishing except several perches and a dropping board. A strong, active male is also kept in the house.

The broodies are supplied the regular ration and are given all the milk they will consume. In three days they are given their freedom, and rarely does one go back to the nest. Usually in a week after being removed from the nest they are laying again.

The broody hen is not hard to break up if she is taken in charge the first night she remains on the nest. If permitted to remain on the nest several nights the broody fever increases and the task of getting her to change her mind becomes a difficult one. Besides, when not taken in hand immediately, a broody hen loses flesh rapidly, which must be regained before she can lay again.

Starving a broody hen with the idea of breaking her up is the worst possible thing that could be done. When, after being subjected to the starving method, the fever finally leaves her, she is in such run-down condition that weeks of good feeding and good treatment will be required to get her in shape to lay again.—T. Z. Richey.

READ THESE BOOKLETS AND YOU'LL BE PLEASED

The Canadian Publications of the Canadian Government Railways This Season Will Delight You

(Halifax Herald)

The summer publications of the Canadian Government Railways have just appeared, and they are a delight to the eye and a pleasure to the intelligence—beautifully printed and illustrated, and full of interesting and informing reading matter—a real credit to the advertising department of the People's Railway. The books make a collection of seven, including the red folder of "Summer Excursion Fares" of the government Railways system from the newest Musquodoboit branch to far-off Winnipeg, for the government system now stretches from the Sydneys and Musquodoboint in the east to the very centre of the continent at the prairie capital. "Summer Excursion Fares" also has a list of hotels and rates.

Each of the booklets has its own different story. Three are devoted to the Bras d'Or Lakes; Prince Edward Island, the euphonious "Abegweit"—cradled on the waves," according to the happy and picturesque symbolism of the noble red man; La Baie de Chaleur, the name given the beautiful inlet of the sea by Jacques Cartier in 1534, when that gallant French navigator sailed into the magnificent haven. The loveliness of those territories and waters, made accessible by the Canadian Government Railways system, can never be forgotten by those who have seen it, and that is almost every one now, but those who have not had this privilege may obtain a fascinating idea of nature's matchless beauty as there displayed by the reading of these charming brochures and the others of the series. They are worth perusal by those who may not immediately intend seeing the country described, but for those who have seen it and who may propose doing so they are invaluable.

There are also the twin booklets "Notes-by-the-Way"—one describing in "Lines Quebec and West" the country from Quebec's ancient capital with its past romance and its present attractiveness to Winnipeg. Some of the chief points of interest are noted and illustrated, for it would take a big volume to tell anything of them all. The happy art of condensation has been well displayed in the preparation of this booklet, as also of its mate—"Lines Montreal and East." Each of the "Notes-by-the-Way" booklets comprises about thirty pages, and the reader who puts in a couple of hours in the study of them will find himself a better-informed, more intelligent reader, and he will have had a very pleasant time turning over the pages and noting the points of the story. Those booklets are well worth reading, and if taken along when on a journey over the Canadian Government Railways will add to the delights of a summer trip. The man or the woman who reads them, if he or she has any idea of making a railway excursion somewhere, is almost sure to decide in favor of seeing the panoramas that will unfold on the lines of the people's railway, whether in Cape Breton, through Nova Scotia, up to northern New Brunswick, or along the St. Lawrence to Quebec and Montreal. And the journey need not stop there, for, going by the Canadian Government Railways, after leaving the I. C. R. at Quebec the traveller may go through newer Canada and past the great lakes to Winnipeg, by the "Western-National," and returning by the "National-Atlantic," express trains with the most modern equipment and affording a service equal to any.

One booklet more remains—"Out-of-Door," sixty pages of information for the tourist, the hunter, the fisherman who may purpose a trip in Quebec or the Maritime Provinces. It gives the basis of all information needed as to fish, games, hotels, guides.

There could be nothing more complete or attractive, or more useful, than this series of booklets for the use of travellers on what is the great system of Canadian Government Railways, and all who had anything to do with their preparation and publication are to be congratulated on the success achieved. "The Summer Publications" cannot but have good results.

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There isn't much fun in just picking up stones and hauling them out somewhere and dumping them off in a pile. The other day I drew the loads of stones over to cut or draw where quite a head of water comes down in spring and dumped them to form a sort of dam across the draw.

Sediment, trash, and dirt will accumulate there and in time fill up the hollow level, adding to the area of my field. It will be good alluvial soil, too. This is more satisfaction than I ever found before in picking rocks. I was removing rocks which rendered a field practically worthless and taking them where they will do good.

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300—Acre Farm, $1300

400 Bearing Apple Trees

Overlooking valley, only ½ mile to school, 40 rods to good neighbors, mail delivered, cream sold at door; 3 miles to village mills, high school, sweet corn cannery. Now keeping 20 cows (should keep 50.) Good judges say wood and timber should bring $5000 at market 3 miles away, 2 large barns, silo; house burned last year; new bungalow, now partly finished. Woman owner, to get immediate sale, makes low price, $1300, half down. For details see page 5, "Strout's Money-Making Farms," copy mailed free. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Tel. Main 3348,

Advertise in The Maritime Farmer.

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Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. COSSAR, Prop. **J. MEIKLEJOHN. Agent.**

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Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

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Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

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For Sale—Registered stock. Male or female.

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Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

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Shubenacadie, N. B. - Bloomfield Farm

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Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Helfer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

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Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

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Eggs for Hatching from Exhibition Matings

Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

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Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

Eggs from these pens $2.00 per 13.

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We have some extra good quality Guernsey Bulls from Record of Performance dams. We must reduce our stock and will sell at very low prices. Write for particulars.

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Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

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I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

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Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

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FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
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To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

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Present offering several choice Cows and Heifers, all ages, and Bulls ranging from 6 to 17 months, sired by our imported prize winner, Grange Kelly, and out of some of the best cows we ever owned. We have also two choice Bulls, about 15 months old, sired by Springbrook White King. We can also sell some nice grade Ayrshire Cows, fresh or about to freshen.

Write us your needs in the Ayrshire line—we have started many young breeders on the right track and have replenished the herds of some of the older breeders. We can supply your wants.

See our herd at the Halifax Exhibition or better still come to see our herd in home quarters. Interested parties always welcome.

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One Registered Bull, "Coverdale Major", No. 98355. Color red with a little white. Calved Jan. 17th, 1915. This is a splendid young bull. Price $125.00.

Also "Perfection", No. 102297. Calved October 3rd, 1915. Bred by F. R. Cromwell, Cookshire, Que. Price $175.00.

These animals are both bred in the purple.

Full particulars of pedigrees given on application. Both are very superior animals. Apply to

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If you have Live Stock for sale, advertise it in The Maritime Farmer.

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PRESENT OFFERING:

Ayrshire Cattle Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

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Shorthorn attle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

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Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

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ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

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R. O. M. HOLSTEINS

All Bull and Heifer Calves advertised in previous issues sold. Present offering three good R O.M. Cows now milking. If desired will be bred to my herd sire, (son of Woodcrest Sir Clyde the $2000 Bull.) Also a Yearling Heifer already bred

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I have sold all my Bulls but one. He is 10 months old and an extra fine individual—is well built and growthy and now weighs 650 lbs. Is mostly white with few dark brown spots. His dam made in R. O. P. test as 3 years old 7492 lbs. milk and 306 lbs. butter fat. Also in R. O. P. test as 4 years old made 8917 lbs. milk and 356 lbs. butter fat. His sire's dam made 1318 lbs. milk and 530 lbs. butter fat in R. O. P. test in 12 mos. and in 15 mos. made 15159 lbs. milk. This bull is sure to make a good show animal, is in fine condition and has just passed the Tuberclin test O. K.

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Eggs $2.50 per 15.

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Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

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Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER,
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W. J. M. MacLEOD, Sussex, N. B.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

WINTERING BEES OUT OF DOORS

Woodstock, N. B., May 20.
Editor Maritime Farmer:

Dear Sir—It no doubt will interest your readers, especially those in New Brunswick, to know that we have successfully wintered bees **out of doors** in this Province during the past winter. This should be good news to those who would like to keep bees but have no suitable place to house them during winter. While we would not advise those who have been invariably successful with cellar wintering to change to outdoor wintering, yet we are sure that many would have better results if they did so.

While our results are for but one season, we feel that they are sufficiently conclusive to warrant the attempt on a much larger scale. Out of twenty colonies packed in quadruple cases, eighteen came through the winter in fine shape. Two cases were packed at Woodstock, one in the city of St. John, and two in Kings County, thus giving us results from both the inland and coastal portions of the province.

The bees were put into the packing cases much too late for best results. In fact, with no previous preparation, the colonies were packed about the time (November 15) they would otherwise have been put into the cellar. With one exception, no choice of colonies could be made, there being but the number nevessary to fill the case available.

The packing cases used were made from a model supplied us by the kindness of Mr. Morley Pettet, Provincial Apiarist for Ontario. In the two cases at Woodstock the materials used for packing was planer shavings. This material was also used in St. John. In the two cases packed in Kings County we used oat chaff mixed with short straw. In some of the honeyboards (used as covers) on the hives were holes of 2 or 2½ inches diameter for feeding and to allow for upward ventilation. Over these holes we placed folded sacks under the packing. On half of the hives the honeyboards were tight. Owing to the fact that we knew little of the condition of the colonies when packed we were, of course, unable to note any differences due to either the material used for packing or the difference in provision for ventilation.

We are of the opinion that the two colonies that did not survive would have perished under the most favorable conditions. Neither colony contained much over a pint of bees to begin with. One showed dysentary very early.

We were unable to observe very closely any of the bees except those packed at the Agricultural School in Woodstock. In this particular case the bees were packed November 10. They had no flight from this date until the 26th of March. We were somewhat alarmed several times during the winter at the numbers of bees that ventured out on bright days, alighted on the snow, and remained there. We also lost a goodly number on their first flight in a pond of water that surrounded the case. We filled the pond with excelsior and thus saved the lives of many bees.

On April 16th we observed the first pollen coming in. At this time red or swamp maple and poplar were in bloom. Our last examination of these bees was on May 15. On that date we found two of these colonies with eight frames filled with brood, drones in the hive, and queen cell cups started. We gave these colonies a second brood chamber.

One of the greatest advantages of outdoor wintering with us in this province will be the protection afforded the bees during the early spring. During this spring, for instance, we have had for the past three weeks almost continuous cold northeast winds. Many colonies of bees that were put on their summer stands fairly strong have been reduced to the verge of starvation—in fact, many have starved outright—because of the large consumption of stores necessary to keep up the temperature of the hive. Much brood has perished from exposure because the cold nights have driven the bees into smaller clusters. These results are bound to follow when bees are wintered in warm cellars and then placed out early and given no protection.

Yours very truly,
H. B. DUROST, B. S. A.,
Instructor in Beekeeping,
Dept. of Agriculture.

KILL HOG LICE

It has been estimated that a 150-pound hog has 92,000 drops of blood. Suppose he is supporting 1,000 lice and each takes one drop of blood per day, what per cent of his blood will be lost daily, and who will pay the bill?

The question is important right now, for lice are worse now than in summer. The hogs pile up closely and spend much time in their beds. The lice take advantage of the situation and breed rapidly.

To remove the lice is neither difficult nor expensive. Dipping as spraying with coal-tar compounds is dangerous in winter, but three other treatments are available. These are:

1. Equal parts of kerosene and machine oil mixed together and applied with an oil can, brush, or swab.

2. Crude oil (thinned with kerosene if too thick), applied with a brush or as a spray.

3. Powdered staphisagria dusted on the pigs, or steeped as a tea and applied with a brush or as a spray.

For a small bunch the first treatment is the most convenient, but when one has many hogs the crude oil is cheaper. Be sure to apply behind the ears and in both flanks. The lice prefer folds of the skin.

Clean the beds and pens thoroughly also. If these are thoroughly sprayed with the oil there should be no further trouble from the lice. If the hogs sleep in straw sheds one can keep them free from lice by treating them every two weeks. Try it.—R. C. Ashby, University Farm, St. Paul.

SAVE THE CLIPPINGS

We subscribe for and read a dozen or more agricultural journals. In these papers we find much useful information well worth preserving for future reference, and for a long time it has been a problem how best to do it. It is impossible to file all the publications, and then the task of finding some particular advice would be rather difficult.

Finally we have hit upon a scheme that works satisfactorily and anything desired can be found in a few minutes. First, we purchased 100 large manila clasp envelopes 6 by 9 inches in size. A box was then made of half-inch boards just wide enough to hold the envelopes standing on end. On the flap was written various subjects, beginning with alfalfa and extending down through the list and embracing all branches of farming.

The envelopes are arranged alphabetically and clippings from the various papers are filed away. In this way all the information desired is saved and kept within reasonable limits. If facts are desired regarding alfalfa or pumpkins, they can be found in two minutes. The box may be made of good material and put up above the desk or in the living room, where it is always handy.—C. H. Chesley.

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HALIFAX
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Increased Prize List in Live Stock Classes
Entries Close August 31st
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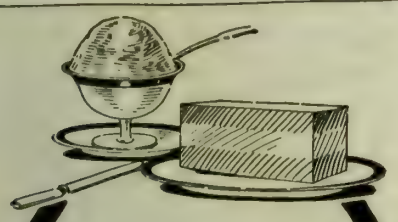
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You can find excuses enough for not doing the things you ought to do. But you cannot offer a single good reason for your failure to enter our School this week.
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THE DAIRY MOVEMENT IN P. E. ISLAND

George Barr, of the Dairy Division, Ottawa, in company with Harvey Mitchell, Maritime representative of the Dairy Division, Ottawa; Rev. P. C. Gauthier, and Andrew MacRae, a prominent Ayrshire breeder, have just completed a tour throughout Prince Edward Island, and already the good effect can be noted. A series of dairy picnics were arranged by Mr. Mitchell and the local Department of Agriculture to discuss vital questions with our dairy farmers. Every man is an expert, and spared no one who was not properly caring for milk, or any factory whose cheese or butter was not being made to the greatest advantage. Mr. Barr dealt principally with the care of the milk on the farm, and after visiting a factory in the morning was well prepared to talk to those who were producing the milk. In many cases Mr. Barr spent considerable time with the makers, throwing out hints, particularly about the fast working curds, the proper working and salting of butter. Andrew MacRae discussed the feeding and breeding of dairy cattle. Rev. P. C. Gauthier represents the Catholic clergy in agricultural matters, and appealed forcibly to every audience to forget race, color, and creed in order that progress might be made. He encouraged them to place a premium on quality of butter, cheese, pork, and beef. He emphasized the great possibilities of the island if intelligent effort took form in co-operative measures, dealing with every agricultural activity. Our boys and girls, he said, are our greatest assets, and too often left the island immediately they were of age. The problem of education was our greatest obstacle, and would never be satisfactorily solved until the small country school gave place to more essential effort where children would be taught in a more modern way. Consolidation, he believed, would be the solution of the problem.

Since the passing of the dairy legislation last winter there has been a decided impetus to excel. The work is now practically under the Agricultural Instruction Aid Act, from which fund the inspector is paid. He is directed by the Director of Agricultural Instruction in co-operation with the P. E. I. Dairymen's Association. The factories open, as a rule, about June 1st. Previous to this date the inspector, Mr. Morrow, visited as many factories as possible and suggested ways and means of improving surroundings. It is safe to say that every factory cleaned up and did some repairing, while in many large sums were spent on floors, vats, etc., while one butter factory purchased a pasteurizer. Cream grading is practiced in several sections. As a result in some places the quality of the output has advanced very much, and only recently test shipments have been made from which the buyer expects satisfactory replies. It is only a matter of time and some effort to bring our dairy products to a high standard.

Centralization seems to be the keynote in butter production in order that a large make is possible, which permits the purchase of high-priced machinery.

The dairy outlook is excellent this season. The weather has been exceptionally favorable, and the crops probably never gave greater promise, thus ensuring sufficient pasturage and large crops of hay. The root crop has got away with an early start, thus giving succulence for next winter.

One of our greatest needs is a dairy school situated in the Maritime Provinces, where our makers could get instruction by gathering together and doing the work, thus discussing problems as they arise. The schools in Ontario are out of reach for our individual makers. This is the only way by which uniformity of make can be ensured, providing the quality of the milk is reasonably uniform. If the Maritime dairymen are going to compete, some such action is necessary at an early date.

POTATO GROWERS, ATTENTION!

The potato crop may be greatly damaged, or perhaps a complete failure, during the present season unless farmers immediately adopt measures to prevent Late Blight or rust, which is usually favored by wet, cloudy weather.

The shortage in the potato crop last year throughout America was due laregly to Late Blight. This disease was more general than usual on account of the wet season. The possible potato crop in New Brunswick for 1915 was reduced approximately 25 per cent, or 3,000,000 bushels, owing to these conditions, and unless potato growers practice thorough spraying a still greater loss is likely to occur during 1916 if the present heavy rainfall continues. Undoubtedly the rains of June will also encourage the disease even though fine weather should prevail from now on.

Late Blight is an infectious disease caused by a fungus which attacks and destroys the foliage and also causes a very destructive rot of the tubers. The spread and development of this organism may be held in check by spraying with Bordeaux Mixture five or six times during the growing season.

Last season demonstration spraying experiments were conducted on farms in different sections of the province, which showed that the yield could be more than doubled by spraying to prevent foliage diseases.

Now is the time to adopt preventive measures if the best results are to be obtained; indeed, if the potato crop is to be benefited to any great extent, growers should start spraying immediately, or when the plants are from six to eight inches high. Good results can be obtained by spraying later, but "the early bird gets the worm." Spraying should be continued at intervals of ten days or two weeks, until five or six applications have been made.

Several strengths of the solution have been recommended, but either of the following have given good results: 4 bls. of copper sulphate, 4 lbs. of lime (freshly slaked), 40 gallons water; or the same formula, using six pounds of copper sulphate, has been recommended by some experimenters.

Separate stock solutions of the lime and copper sulphate will keep indefinitely and may be made up at the beginning of the season; but the Bordeaux resulting from the mixture of the lime and copper sulphate will not keep and should be made up only as needed.

Stock solutions:

(A) Dissolve considerable copper sulphate (sufficient for the season) at the rate of one pound in a gallon of water.

(B) Slake the lime and add water to make a milk of lime. equal to one pound in a gallon of water.

To make the required mixture, dilute four gallons of the copper sulphate solution up to twenty gallons, and four gallons of the milk of lime (after stirring up) to twenty gallons, and mix these two diluted solutions in the spray tank. Apply at the rate of one to two barrels per acre, depending on the finenes sof the spray and the size of the tops.

More detailed information may be obtained by writing to G. C. Cunninghame, Dominion Plant Pathological Laboratory, Fredericton, or by writing to the Department of Agriculture, Ottawa, for Circular No. 10, "Late Blight and Rot of Potatoes."

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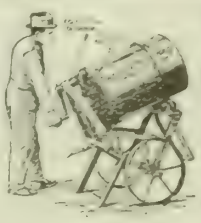
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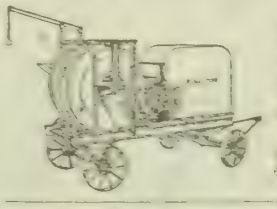
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Minard's Liniment Co., Limited.
Gents—I cured a valuable hunting dog of mange with MINARD'S LINIMENT after several veterinaries had treated him without doing him any permanent good.
Yours, &c.,
WILFRID GAGNE.
Prop. of Grand Central Hotel,
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Twice a Day For Half the Year

SOMEONE has to attend to the furnace; most people look on it as an irritating, dusty job. It need not be. It is not, if you have a Sunshine Furnace. **Shaking down the Sunshine Furnace does not raise a dust.** The fine ashes are drawn up the chimney; there is never that fine sprinkling of dust that lights on everything in the basement, and even floats up through the house. No. That is one thing the owner of a Sunshine Furnace never has to contend with. The Sunshine is as clean as a piece of furniture.

There are extra sturdy grates that turn with a long handle to crush with ease the hardest clinkers. A slight rocking that hardly requires stooping cleans down the ashes. The ashes fall as the grates are shaken, for the sides of the fire-pot are straight. This saves bother—and heat; because if ashes bank up around the fire-pot they stop the radiation of heat. The ashes come out in a big ash-pan. There is no shovelling or spilling ashes about.

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McClary's Sunshine Furnace

Would you like to have definite information about the cost of installing a Sunshine Furnace in your home? Send the coupon for our booklet "Sunshine." At the same time if you wish to know what it will cost to heat your own home, our Heating Engineer will tell you. He will show you how to plan the distribution of heat so as to get the utmost warmth from the coal you burn. No, there is no charge. Simply address him at

Kindly send me without expense on my part:—

1. Your booklet on the Sunshine Furnace.

2. Also forms for filling out, so that your heating engineers can tell me how to order and install a system that will properly heat my home.

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MARKET FOR HAY IN CUBA

Mr. J. C. Manzer, Special Representative of the New Brunswick Government in Havana, has forwarded to the Department the following account of the hay trade in Cuba. The importation of hay into Cuba is increasing year by year. The following is a list of the importations during the years 1912-1915:

	Tons
In 1912 Cuba imported	15,870
In 1913	14,864
In 1914	18,536
In 1915	23,331

Of these amounts:

	Tons
1912—	
United States supplied	7,741
Canada supplied	7,769
1913—	
United States supplied	10,792
Canada supplied	3,617
1914—	
United States supplied	13,336
Canada supplied	3,956
1915—	
United States supplied	21,448
Canada supplied	1,717

Before the war Canada supplied 50 per cent of the hay to Cuba, while the United States furnished about the same quantity. Last year, as a result of war conditions, the Dominion only supplied Cuba with 7 per cent of her requirements, while the United States furnished 90 per cent.

Quality of Hay Required

A considerable quantity of these hay importations are coming here by way of Baltimore, New Orleans, and other southern ports. The flaflvflour is not as good as well cured hay grown in the north. For this reason when Canadian dealers are again in a position to supply this market they can secure a large share of Cuba's hay trade. Cuba buys a limited quantity of high grade hay, but the bulk of the importations are what our dealers would call good No. 2 Timothy. Clover hay is not in demand here. Clover mixed hay is sold in considerable quantities, but should not contain more than 20 per cent of clover, which must be good and bright.

The Size of Bale Most Favored

The size of the bale best suited to the Cuban trade is 17-inch by 22-inch by 3 feet long, and weighing about 170 pounds to the bale. These will run about twelve bales to the ton. This size of bale is favored by the transportation companies, as 100 tons of hay running twelve bales to the ton will take up much less space than lighter bales running thirteen or fourteen to the ton. These bales should be tied with three No. 12 wires, with tags inserted under the wire showing weight of bundle as well as shipping mark. A shipping mark easily identified on each bale is essential to prevent lots getting mixed.

Transportation and Price

On account of the heavy demand for steamer space for less bulky classes of freight it has been very difficult to secure shipping facilities for hay during the last few months. As a result, the price of hay in Cuba has been steadily advanced. Good No. 2 Timothy hay is quoted today at $34 and choice Timothy at $40 per ton.

Cows require salt in summer as well as in winter.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, JULY 25, 1916. Number 20.

English Apple Market During 1915-16

Hints for the 1916-17 Packers

By J. Forsyth Smith, Fruit Trade Commissioner Leeds, England

General Market Conditions

At the beginning of the apple season of 1915-16 the trade was generally very optimistic as to the prospects of prices for good fruit landed in favorable condition, as the main apple consumption depends upon the prosperity of the working classes, and all classes of labor were fully employed at wages considerably higher than normal, and able and willing to buy apples freely. It was also realized that the short crop, restricted shipping space, and high freights would lead to a limitation of supplies, which would help to maintain prices. In general, it may be said that these expectations have been realized, and throughout the season reliably packed barrel apples, sound, and of high-grade standard, have brought excellent prices, though inferior or slack-packed fruit has frequently fallen to an unprofitable level. The demand was, however, scarcely as strong and steady as had been anticipated, the Christmas demand being especially disappointing. The holiday demand slackened off very much earlier than usual this year, on account of the congestion in railway freight traffic, country buyers not caring to take the risk of their purchases failing to arrive in time for Christmas selling, and of having on hand large quantities of a perishable commodity during the comparatively slack weeks of the opening year. The December supply also was not very well timed, nearly half of it arriving after the middle of the month, and much of it being still further delayed by slowness in discharging, due to dock congestion, shortage of dock and cartage labor, etc., so that it could not be offered for the Christmas trade.

The prices for boxed apples have scarcely been up to expectations. At an early date it became apparent that, while the prosperous working classes were ready to buy the normal quantities of apples, they were quite content to buy the cheaper barrel apple, and did not care to pay the extra price asked for apples in boxes. The effect of war conditions, increased cost of living, increased income tax, etc., upon the wealthier class was such as to induce a strong preference for the cheaper fruit. The restriction within the smallest limits of banquets, dinners, and similar public functions also had a noticeably adverse effect on the demand for boxed apples. The apple crop in California, very largely made up for the shortage in the northwestern states, and many British dealers, after speculating rather daringly in California Newtowns, were obliged to reduce their stocks at very low figures. As a result, therefore, the box apple market during the months of heavy shipment was far from satisfactory.

Ontario Barrel Apples

There were some justifiable complaints by the trade during the heavy shipping months of November and December, especially as to the inferior quality of many of the Ontario apples received. This was apparently due to the tendency, so natural in a short crop year, to make use of many apples not considered marketable in a year of average or large output, and to pack somewhat too closely to the minimum of the Inspection and Sales Act requirements. In many cases too little attention was paid to maintaining No. 1 size and color requirements. Some No. 1 Golden Russets were also observed with a plentiful sprinkling of spot marks. A more serious mistake was the shipping of scabby No. 3, many of which, especially Golden Russets and Greenings, reached the market in such a wasty condition as to return no more than 5s. to 10s. Such lowering of standards is greatly to be regretted, as, with high ocean freights and increased handling charges, many shipments must have represented a direct loss to the shipper, besides having a most unfortunate effect on Canadian prestige on the market. In spite of this criticism of certain inferior packs throughout the season, there have been a number of reliable shippers whose output has been all that is to be desired, and who have commanded top prices wherever their apples have been offered. Ontario apples were sent very largely to Glasgow, where they are highly appreciated, though fair quantities were sold at Liverpool and a few in London and in Manchester.

Nova Scotia Barrel Apples

London was the principal market for Nova Scotia apples, though Liverpool also disposed of a fair quantity, and Glasgow a few. The London market was the least satisfactory of the primary receiving centres of the United Kingdom, the situation here being much more affected by the English apple crop than any other point. Usually the effect of the English apple crop upon market prices is pretty well over by the middle of November, but this year railway traffic difficulties were such that many growers acted upon the advice of the Board of Agriculture and stored their apples during the early part of the season, offering them for sale in considerable quantities during the weeks before Christmas.

The criticism of Ontario apples applies also to a number of packs of Nova Scotia apples. This is especially so in the matter of scabby No. 3 apples. It was also true, in the case of the Nova Scotia apples, that, although handicapped by the season, reliable packers were able to send forward a grade and quality of fruit that were very much appreciated, and that usually commanded the best prices. Nova Scotia shippers, in many cases did not pay sufficient attention to placing the various varieties on the market when they are at their prime. This was especially the case with some shipments of Kings in December and of Starks and Baldwins later on, which reached the market with a large percentage of slack and wasty parcels, due to the fact that the apples were long past their proper season. Causes of delay over which the shipper had no control may have had something to do with the holdover, which would perhaps be justified by the hope of higher prices on the later market. It is clear that the chances are nearly always in favor of sound apples bringing higher prices on a low market than wasty ones on a high market. The risks of deterioration are too great to be taken except for the best of reasons.

Canadian Boxed Apples

British Columbia box apples have only reached the market in small quantities this season, something over 8,000 boxes having been distributed between London, Glasgow, and Manchester. In general they reached the market in excellent condition, except in the case of Cox's Orange Pippins for the London market, many of which were soft and wasty and had to be sold at greatly reduced prices on this account.

The varieties were mainly Yellow Newtowns, Spitzenbergs, Jonathans, and Rome Beauties. The English Cox's Orange Pippin is very popular on the market, and as the supply is small in comparison with the demand British Columbia Cox's Orange Pippins of reasonably good color that can be laid down in good condition are assured of excellent prices. The past season, however, apparently showed that there is likely to be some difficulty in placing the larger sizes of this variety on the market in good condition. Shippers are therefore advised to ship the smaller sizes only. The English Cox is a small, well-colored apple, and small, well-colored apples of this variety from British Columbia are greatly superior in market value to those that are larger, softer, and below standard as to color. The Yellow Newtown is one of the most important of the imported varieties, but, with this exception, red varieties are preferred, Jonathans, Spitzenberg, and Winesaps all being in good demand. The Grimes Golden sells only with difficulty. Red varieties are especially called for early in the season, while the English crop is supplying the uncolored varieties plentifully.

Buyers complained of the size of many of the British Columbia apples on the market last season. The demand is for sizes from 125 to 163, and during the winter months very good prices have been given for apples over the 200 count. How size preference affects auction prices is clearly indicated in the following illustration, representing the prices offered in Glasgow for Extra Fancy Washington Winesaps on January 14, 1916:—96, 9s. 6d.; 113, 10s.; 125 to 138, 10s. 6d.; 150 to 163, 10s. 9d.; 175, 10s. 6d.

In the past the British Columbia export of apples to this market has been too small to make any definite impression on the trade. A continuous and dependable supply regularly moving through certain definite channels is required before a demand for British Columbia apples can be built up among British buyers. Washington and Oregon apples are looked after by a sales representative residing in London, and have been offered so steadily and continuously that they are well and favorably known on the market. British Columbia should not delay too long in adopting an aggressive export policy designed to prepare these markets to receive the larger quantities that must needs be sent here when its orchard output approaches its maximum.

About 20,000 boxes of Ontario apples, and nearly 4,000 Nova Scotia box apples, were on the market last year. Some excellent packs were inspected in Glasgow, but many others seen were very far from the standard of perfection in grading and packing that has given the western box apple a distinctive place on the market. The sizing especially was frequently very poorly done, resulting in slack packs, and there was often a lack of uniformity as regards color requirements. There is undoubtedly a certain field for the expansion of the box packing of eastern apples, but it would be a mistake to pack in boxes any but the best apples of the best varieties. A considerable improvement in the standard of grading and packing is also necessary.

Channels of Distribution

The different methods of securing distribution for his apples on the British market, which are open to the Canadian shipper, are:

1. Consignment to the wholesale apple auctions at the primary receiving centres, Liverpool, London, Manches-

ter, and Glasgow, for sale on shippers' account. 2. Consignment to wholesalers at the same primary receiving points, who sell by private sale on shippers' account. 3. Consignment to wholesalers at secondary receiving centres such as Leeds, Newcastle, Aberdeen, etc., for sale on shippers' account. 4. Sale direct to wholesalers at primary or secondary centres, at a price f.o.b. Canada, on the basis of cash against documents. 5. Distribution through a resident sales representative of the shippers.

1. The Auction Sales.—Much the greatest quantity of apples passes through the apple auctions, and they furnish a very valuable channel of distribution. Their advantages are: Quick distribution (15,000 to 45,000 barrels per week in normal times); the fact that prices are settled by the competition of a considerable proportion of the largest buyers in the country; the special opportunities this offers for securing premium figures for packs known to be reliable and of high standard; the openness of the competition and the facilities thus afforded for verifying returns made to the shipper; the comprehensiveness of the buying capacity concentrated in an auction salesroom, representing as it does both high and low class demand, and thus furnishing an outlet at some price for the inferior grades and marks as well as for the best, for slack and unsound fruit as well as that which is in the best of condition, for uncommercial as well as commercial varieties. The main disadvantage is that the brokers' interests are rather in the direction of handling the largest possible number of barrels than in securing the best possible price for any particular lot. There is only the comparatively slight inducement of competition among the brokers for business to induce them to hold for more favorable prices. On the whole, however, a reliable packer with a reputation for grade and quality will be well satisfied with his apple auction dealings. The prices received are quite likely to be as good as would be paid anywhere else in the market. It may be said also that in many cases the importers, acting in conjunction with the brokers, have their own agents in Canada, who are prepared to make satisfactory advances on goods consigned, or frequently to purchase outright.

2. Consignment to Wholesalers at Primary Points.—The value of this method to the shipper depends very largely upon his finding a good reliable firm to deal with. Such a firm, long established and with good connections, will usually be able to secure the full value of the fruit, though possible prices at a primary receiving point are very largely determined by the auction prices.

3. Consignment to Wholesalers at Secondary Points.—Some consigning is done direct to wholesalers at secondary points, and some shippers have had very satisfactory results in this way. Usually, however, it is rather difficult to gauge the quantity that such secondary points can use satisfactorily, the interests of the wholesaler constantly tempting him to ask for more apples than he can dispose of to the best advantage. It is believed that, for sales on shippers' account, the auctions will generally give the best results

4. Direct Shipping.—An investigation is now in progress as to the possibilities of direct shipping on a f.o.b. basis to the wholesalers at the secondary distributing centres. Under the abnormal conditions created by the war, with high freights, limited steamer accommodation, delays in loading and unloading, dock congestion, and labor shortage difficulties, the wholesaler in many cases considers the risk too great for satisfactory direct buying business. He considers that it pays him better to buy according to his needs at one of the great auctions, apples whose condition and quality he can personally inspect. A short tour, however, of some of the principal Scottish secondary centres has made it clear that even in war time many wholesalers are willing to do business direct, on the basis of cash against documents. It is proposed, therefore, before next apple season opens to get into touch with the wholesale trade of most of the important cities of the United Kingdom, and to prepare a full report giving a list of wholesalers who are willing to deal direct, together with an estimate of their several requirements. This method of business, in which the wholesaler takes all the risks, will appeal especially to those shippers who prefer a fair but sure price agreed upon early in the season to top price possibilities as the season advances. It is only possible on a basis of mutual confidence, i.e., between an honest, reliable shipper and a fair and reasonable buyer.

5. Resident Sales Representative of the Shippers.—Business by this method is the most satisfactory of all, as the shipper's representative on the market is in a position to arrange for the distribution of the apples to the various markets, to dispose of them at auction when that course seems desirable, to withdraw them when the bidding is not satisfactory, to place them in cold storage when conditions warrant, to arrange private sales direct to the wholesaler, to discuss classification with auction brokers, to note the condition of the apples on arrival and make necessary adjustments, and in general to make sure that in no instance are the interests of the shipper sacrificed to the insistence of the ever-present buyer. The United Fruit Companies of Nova Scotia, the North Pacific Fruit Distributors of Spokane, Wash., and the Northwestern Fruit Exchange of Seattle, Wash., all have their own representatives on the market, and the results obtained have fully warranted this policy, which, however, is only possible where considerable tonnage is concerned.

APPLE AUCTION SALES ROOM, GLASGOW, SCOTLAND

Methods of the Apple Auctions

A somewhat detailed description of the methods of handling apples on the wholesale apple auctions will doubtless be of interest to the Canadian shipper:—

The apples are received on the quay as they are discharged by a quay foreman in the employ of the broker, who sees that they are classified in lots according to mark and grade, and also according to conditions as tight, slack, slightly wet, or wet. On the report of this employee, checked, as occasion seems to warrant, by personal inspection by the broker, the apples are entered on printed catalogues, clearly indicating the origin of the fruit (Nova Scotia, Ontario, Virginia, Maine, etc.), the steamer on which it has arrived, the name of the packer or shipper, the number of barrels or boxes in each lot, and the judgment of the broker's representative as to their condition. The apples are arranged in order on the quay, and at some time before the sale the larger buyers make a practice of sending down representatives, who examine the various lots and make detailed note of the pack, color, grade, and quality of each, which they report to their employers. Buyers who cannot afford to have such a detailed inspection made by their own employees avail themselves of a similar report that is made and distributed to them by one of the master carters of the city. As a result of this system, when a buyer bids at the sale he has in mind in making his offers, not only the information furnished by the brokers on the catalogues, but also the judgment of his own employees as to the relative value of the various lots. A premium is thus placed upon good pack and grade, and while poor lots may be neglected, good ones have the benefit of an eager competition that brings top prices.

Some 200 to 250 buyers assemble in the Commercial Sales Room, where the seating is arranged in successive tiers as in a theatre. These buyers comprise wholesalers from Liverpool and from all considerable towns and cities in the north and middle of England. The auction is closed except to those who are specially admitted by license, and wholesalers who are not members must do their buying through a member, who charges a commission of 3d. to 6d. a barrel for his services. In the centre of the room there is a trap door communicating with a basement beneath, and as each lot is offered for sale a sample barrel or box, opened, is sent up from below for inspection. As the buyers do not leave their seats, this

(Continued on page 683)

Cabbage Root Maggot and Its Control in Canada

(Phorbiabrassicae Bouehe)

By Arthur Gibson, Chief Assistant Entomologist, and R. C. Treherne, Field Officer.

(Continued from last issue)

Preoviposition Period

The preoviposition period, or, in other words, the period from the time the fly emerges from the puparium until its lays its eggs upon the plants, is an important consideration in view of the fact that it has been recently demonstrated that the adult fly of a closely allied species may be destroyed by poisoning during such period. Under insectary conditions in British Columbia flies (3 males, 6 females) which emerged from puparia on July 19 were placed in a glass breeding jar which covered a small potted cabbage plant. On July 28 all the flies were dead, but on examination on the morning of July 29, 75 eggs were taken from the stem of the plant and 8 freshly hatched maggots. The presence of the maggot indicated that eggs must have been laid at least four days previous to July 28. The preoviposition period, therefore, under such conditions was about six days. It is interesting to record here that 73.5 per cent of these eggs laid in confinement by flies emerging in the laboratory were fertile. The newly hatched maggots were immediately placed on a young cabbage plant, and on August 16 a few maggots had attained the length of 3 mm. (one-eighth of an inch) and one puparium was found on August 24. In other experiments we were also successful in inducing flies to mate in confinement and deposit eggs. Further observations, however, must be made on the preoviposition period of the fly in order to definitely determine its value as regards the control of this insect.

Hibernation

From a study of the life history of the insect we assume that the stage in which it hibernates in Canada is usually the puparium stage. This agrees with the published statements of other investigators. Fletcher claims that the insect also hibternated as larvae in old stems and roots which have been left in the grounds. In our observations at Ottawa, Ont., in the spring of 1904, we found in a turnip field, the crop of which had not been harvested, a single larva, which we considered to be that of Phorbia brassicae, near an old root in company with many puparia of that species. Unfortunately, however, the larva was injured in collecting, and after a few days it died. In 1911, on November 9, we found at Ottawa full-grown larvae near old cabbage plants. This would bear out the supposition that the insect may hibernate in the larval form in eastern Canada. In the Ottawa district heavy frosts occur all through September, October, and November. By the middle of this latter month the first temporary fall of snow has taken place, and winter in reality begins in late November or early December, when the ground freezes up.

At Agassiz, B. C., larvae have been found in the first week of November (1915) in sizes varying from 2 to 4 mm. long. In December (1913 and 1914) full-grown larvae were also found at this latter locality in the roots of old cabbage plants. Climatic conditions at Agassiz, B. C., differ from those of eastern Canada, the rainy season commencing in autumn, and the real penetrating cold weather usually not beginning until about the end of December. Other students have claimed, in addition, that the insect hibernates in the adult stage, but all investigators agree that the stage in which the insect regularly hibernates is the puparium stage.

The following shows the number of puparia collected from the field at Agassiz, B. C., in 1915, on the dates mentioned:

August 27—Number of puparia collected, 70; flies emerged, 57; missing or parasitized, 2; sound puparia left to pass the winter, 11.

September 1—Number of puparia collected, 75; flies emerged, 43; missing or parasitized, 6; sound puparia left to pass the winter, 26.

September 25—Number of puparia collected, 65; flies emerged, 2; sound puparia left to pass the winter, 63.

September 30—Number of puparia collected, 72; flies emerged, 0; sound puparia left to pass the winter, 72.

Totals—Number of puparia collected, 282; flies emerged, 102; missing or parasitized, 8; sound puparia left to pass the winter, 172.

From this it will be seen that 61 per cent of the above puparia will pass the winter in the puparium stage, while only 36 per cent gave forth the adult flies. As previously mentioned in this bulletin, no flies emerged from any of our outdoor breeding cages after September 27. In this connection we may state that at Agassiz, B. C., on September 28, 29, and 30, 1915, a field examination was made of 78 cabbage plants around which were found 124 empty pupal cases from which the flies had emerged, and 96 sound and apparently healthy puparia.

The adult flies which emerge during September may be found hovering around late cabbages and cauliflowers, old cabbages, stalks, etc., in the field, and may be observed actively at work laying eggs. Egg deposition by flies which developed in the autumn, as already stated, may continue until October. Unfortunately, all of the flies reared from the September puparia, and which were under observation in our outside laboratory, died within three weeks, although provision had been made in the hope that some might hibernate. While acknowledging the possibilities that under suitable conditions adult flies may winter as such, our experiments have failed to prove the fact.

THE IMPORTED ONION MAGGOT

The Imported Onion Fly, Hylemyia antiqua Mg. (Phorbia ceparum Mg.), has for many years been a regularly occurring pest in Canada. It is injurious in every province from Nova Scotia to British Columbia.

Life History—The Egg

Description.—Similar in shape a appearance to the egg of the Cabbag Root Maggot Fly. Length 1.2 m.m., white in color, with distinct ridges. The groove on one side is by no means so deep and conspicuous in this species as in Phorbia brassicae and only extends from about one-fourth to one-half the length of the egg.

Duration of Stage.—The length of the egg stage ofthis insect varies as in the case of the Cabbage Root Maggot Fly. The general statement has been made that the eggs hatch within a week. The actual period, however, will vary according to climatic conditions. Severin-Severin (11) recently recorded that under field conditions in Wisconsin the icubation period of eggs deposited by the first geeration of flies, in early June, varied from three to four days.

Larval Emergence.—We have not actually noticed any larvae of the Imported Onion Maggot emerging from eggs, but this act is undoubtedly similar to other species of this group of flies, the young maggots of which emerge from the blunt or head end of the egg.

The Larva

Description.—When full upon, about 10 mm. in length, white in color, cylindrical in shape, blunt at one end and tapering to the head, in general very similar to the Cabbage Root Maggot. The blunt end is rather rounded, not so abrupt as in the latter larva, and the fleshy tubercyles at this end near the spiracles are arranged differently. In the Cabbage Root Maggot the two central tubercles are bifurcate, or two pointed, and in the Imported Onion Maggot they are single pointed. Near these there are also in the latter species a pair of small additional tubercles. The two black, hook-like jaws and the fan-like spiracles near the same are similar to such organs in the Cabbage Root Maggot.

Duration of Stage.—The length of the larval stage ranges from two to three weeks in summer. Severin-Severin have stated that in seeded onions from the previous year the development of the maggots was often prolonged, in some instances requiring from four to five weeks.

Pupation.—When the maggot is fully fed and has reached maturity it changes to a puparium. This may take place in the soil close to the plant or later in the season between the outer fleshy layers of the onion near the place where the larvae have been feeding. Puparia have ben found in the soil at Ottawa, Ont., at the end of August, 3 inches below the surface of the soil. In December we have found the puparia from one-half an inch to three inches beneath the ground. On December 6, 1915, a number of living larvae and puparia were found just beneath some old onion plants which have been pulled and placed on earth in an outdoor insectary, from a portion of which the screen windows had been removed. This is the only occasion on which we have found living larvae so late in the year, and as winter had already set in, the ground being frozen hard outside, there is every reason to conclude that these larvae would have wintered successfully and changed to puparia the following spring. In Canada we have no records of the insect hibernating in the adult form.

The Puparium

Description.—Similar in general appearance to the puparium of the Cabbage Root Maggot. In length it varies from about 5 mm. to 7 mm. (rather more than one-quarter of an inch), and in color from light to dark reddish brown. As is the case with other similar puparia, the larval characters are retained.

Duration of Stage.—At Agassiz, B. C., in 1915, the puparium stage varied in mid-summer from 14 to 26 days. In eastern Canada in the same season of the year the average length of the stage is about two weeks. The winter is passed usually in the puparium form, from which the flies do not emerge until the following spring.

The Adult

Description of the Male.—The Imported Onion Maggot Fly is slightly larger than the Cabbage Maggot Fly. The body of the male is of a light greenish-gray color, the legs being darker. The body and legs bear numerous black bristles of varying lengths. On the back of the thorax are four indistinct dark colored bands, and there is also a distinct blackish band down the centre of the abdomen. The upper portion of the femur of each hind leg lacks the conspicuous cluster of bristles so characteristic of the Cabbage Root Maggot Fly.

Description of the Female.—The general color of the female fly is similar to that of the male. The eyes in this sex are widely separate, not close together, as in the male, and the abdomen is more pointed. The bands on the thorax are very faint, and in some specimens there is no band down the centre of the back of the abdomen.

Proportion of Sexes.—In our breeding experiments at Ottawa, Ont., in July, 1913, the sexes reared were about evenly divided, the number of female flies being slightly in excess of the number of male flies.

Development

The development of the Imported Onion Maggot throughout the year is most probably very similar to that of the Cabbage Root Maggot. The flies which develop from overwintering puparia emerge in the spring, the exact period varying according to climatic conditions. At Ottawa, Ont., in the third week of May, 1915, we observed the flies in numbers in an onion field. No eggs were deposited on or near the plants until June 4, when several clusters were observed. Such eggs deposited in spring develop into the first brood of maggots. In years of abundance the maggots may be found until late in the autumn, so there are probably about three breeds of larvae in a season.

Habits—Food Plants

The Imported Onion Maggot, under natural conditions, so far as we know, only attacks the onion plant. The various varieties are liable to infestation at any size during the growing season, but in most years it is the young plants in June which are largely destroyed.

Nature of Injuries

It is only in the larval, or maggot, stage of course that injury to onions is effected. When the young larvae hatch from the eggs they at once begin to work their way down within the sheaths until they reach the young forming bulb in which they feed and ultimately reduce the same, particularly the lower portions, to a rotten mass. Later in the season, when the bulb is well formed, the injury is usually confined to the lower half of the bulb, which is often entirely eaten out. We know of only one instance, at Ottawa, where the maggot was found in a stem of onion above the surface of the ground. As already mentioned, the important injury in eastern Canada in most years is specially noticed in June. When young onion plants at this time are seen to droop, the leaves appearing wilted and discolored, it will generally be found that the maggot is responsible for such injury. Toward the end of July, and later, when the bulbs are well formed, many larvae will be found feeding together in a single bulb. In one bulb examined at Ottawa, Ont., on July 18, 1913, there occurred 29 maggots. In another received from western Ontario on September 28, 1915, 67 larvae, in all stages, and 12 puparia were present.

Reproduction—Oviposition

The Imported Onion Maggot Fly deposits its eggs on the young leaves of the plants, or later on the outside of the stem near the soil. Eggs may even be laid on the soil. The first eggs of the season of 1915 were observed at Ottawa, Ont., on June 4. On one plant 8 eggs were seen, on another 6, on another 20, and from still another 52 were taken. On other days following many other eggs were observed. Some of the eggs were one and one-quarter inches away from the

(Continued on page 683)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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JULY 25, 1916

DATES OF ISSUE.

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WHO WAS THIS PRODIGAL FATHER ?

A certain man had two sons, and the younger of them said to his father: "Father, give me the portion of thy time, and thy attention, and thy guidance which falleth to me." And he divided unto them his living in that he paid the boy's bills, and sent him to a select preparatory school, and to dancing schools, and to college, and tried to believe that he was doing his full duty by the boy.

And not many days after, the father gathered all his interests and aspirations and ambitions and took his journey into a far country, into a land of stocks and bonds and securities and other things that do not interest a boy, and there he wasted his precious opportunities of being a chum to his own son. And when he had spent the very best of his life and had gained money, but had failed to find satisfaction, there arose a mighty famine in his heart, and he began to be in want of sympathy and real companionship. And he went and joined himself to one of the clubs of that country, and they elected him chairman of the House Committee, and president of the club, and sent him to the legislature. And he fain would have satisfied himself with the husks that other men did eat, but no man gave unto him any real friendship. But when he came to himself he said: "How many men of my acquaintance have boys whom they understand, and who understand them, who talk about their boys and associate with their boys and seem perfectly happy in the comradeship of their sons, and I perish here with heart hunger! I will arise and go to my son and say unto him: 'Son, I have sinned against Heaven and in thy sight, and am no more worthy to be called thy father. Make me as one of thy acquaintance.'" And he arose and came to his son. But while he was yet afar off his son saw him and was moved with astonishment, and instead of running and falling on his neck, he drew back and was ill at ease. And the father said unto him: "Son, I have sinned against Heaven and in thy sight. I have not done my duty by you, and I am not worthy to be called thy father. Forgive me now and let me be thy chum." But the son said: "Not so. I wish it were possible, but it is too late. There was a time when I wanted to know things, when I wanted companionship and advice and council, but you were too busy. I got the information, and I got the companionship, but I got the wrong kind, and now, alas! I am wrecked in soul and body, and there is nothing you can do for me. It is too late, too late, too late!"

The moral is plain. Fathers, be your sons' closest companions. You can if you will.

COMMUNITY SPIRIT

We are coming to see more and more that great natural talents or splendid opportunities are not of so much benefit to mankind unless they are accompanied by the desire to serve.

Perhaps we notice this mostly in our people who fill public offices. In the western country our school teachers are only doing about half their duty when they teach the school. We need educated leaders of thought in every community. Where can we find them if not in our teachers and ministers?

Our teachers need to visit the homes in their district. They will get as much pleasure as they give. Instead of arranging to spend every week end in the nearest town or village, let them arrange to spend their Saturday afternoons visiting the homes of the different pupils in succession. Word could be sent a week ahead to the mother, so if she did not wish to entertain the teacher that Saturday she could arrange for another time. Too many teachers go into a district and only meet with the people who especially invite them to their homes. In this way the others lose the benefit of the teacher's presence. And the teacher often misses knowing the choicest spirits in the community.

The teacher brings into the district a store of freshly acquired knowledge. We all should avail ourselves of this. To do so we must invite the teacher to our homes. If he or she is a critical person, who turns up his nose at a children-filled home, littered with the disorder which all children make, sensitive mothers hate to venture the invitation.

It is a strange thing the way people turn up their noses at a lot of little children. Especially if they are not well dressed. A mother feels quite apologetic taking a number of little children to almost any public gathering. They are mostly regarded as little nuisances, to be kept as much in the background as possible. Any one who lives with them understands how difficult it is to keep children in the background. So the mother has a guilty feeling of being rather unwelcome with her little flock. Yet a mother is doing her duty by her community when she furnishes several good children, feeds them, clothes them, and trains them. She is providing the material for the training. And the teachers, ministers, and bank officials who have the leisure should provide the helpful training.

We do not mix up together enough in our little communities. Each one seems to live to himself. Some of us have so much to do in our own homes. Others, who have leisure, like teachers and bank workers, seem to prefer to spend it in playing tennis or golf, to using their talents for the community.

Both of us are partly to blame. The busy mother should make time to invite the lonely teacher or bank boy, perhaps away from home for the first time, to her comfortable home. The invited guest must meet this real attempt at hospitality halfway, by graciously accepting, and then by taking the spirit of kindness in which it is offered into account, and not by criticizing the home or its contents.

We need to meet on common ground. Often we can do this in the church and Sunday school. We should meet at the school house during the week, too. Baseball and football could be played on the adjacent grounds during the summer. The mothers of the players, sisters, or wives can go along to watch the play. When the wives go the babies have to go, too. And this is quite all right. The babies are the men and women of the future and have a right "to a place in the sun," as Kaiser Wilhelm says.

The women have their work for the soldiers. Usually they meet once or twice a month. It would be well to have a meeting in the evening once in a while, when the work is not too strenuous, so the men can come too.

When the women folk take the cream to town they should visit the town women while the cream is being tested. It does both women good to meet, and promotes a good feeling between town and country. The town woman should give a hearty welcome no matter what she is doing. Work will wait, but if the country friend once feels that she has come at an inopportune time she is not likely to repeat the visit or to try to visit another woman.

Interests in common are a great source of community spirit. When there is a social in the country the town folks should make it their business to go and help, at least with their presence and purchases. The country people are always good to come in and help with functions in town.

POTATO ALCOHOL INSTEAD OF GASOLINE

Good use for distilleries and breweries which are being put out of business by the "dry" vote and prohibition: Make potato alcohol, denatured, for use in the arts and industries and as fuel. There is an unlimited market for potato alcohol in place of gasoline for automobiles, trucks, tractors, stationary and movable engines, and all other fuel purposes for which gasoline is employed. There are many other industrial ways in which potato alcohol may be employed, as in paints, varnishes, etc. The denatured spirits are of such a character that it is practically impossible for them to be used as a beverage. Breweries and distilleries can afford to pay a price for potatoes that will make this crop compare with wheat in profit to the grower. This matter is of the largest importance to the farming and manufacturing interests of the whole country, for breweries and distilleries which heretofore have turned out intoxicating liquors can be utilized as a market for a greatly increased potato crop, producing therefrom fuel spirits which may be sold in competition with gasoline.

An attractive letter head on good paper gains a hearing for anything one may care to write. Every breeder should try to adopt some distinctive, modest design to use on his stationery. Eventually it becomes a sort of trade mark. It is worth far more than it costs.

A P. E. I. Farmers' Sheep-Raising Experience

Editor The Maritime Farmer:

Your readers appear to take a great interest in my farming operations, such as they are, and my old-fashioned methods, judging from the number of letters I have received, some asking for my photograph, others for a picture of my premises. Neither my own photograph or that of my premises would make a very good picture. I suppose it is because I am an old woman. I will endeavor to answer through your paper some questions about my sheep, which appear to be of the greatest interest.

I may say that my flock is a small one of grade Shropeshires, though I think the Leceisters would be more profitable now that wool is so high. They are payig 50c a pound here for washed wool, so that the income from the fleece is perhaps the most important. I had a Leceister ram a few years ago that sheared 14 lbs. of wool. At 36c a lb. that flee.ce would be worth today $5.00, so that if wool keeps up in price I think it would pay to have Leceisters, as they yield so much more wool than the Down breeds. while the lambs in the fall would likely fetch as much. But my objection to the Leceisters was that they were hard to keep, not being nearly so hardy as the Shrops and South Downs.

"Do I have trouble with sheep jumping the fences?"

Well, I should say I have! That is the great objection to sheep keeping. At present I have all my sheep "blocked," or tied in pairs. In small fields it seems impossible to keep the sheep from jumping. Sheep want wide range. For several years I had our sheep in a 50-acre pasture rented from my next neighbor, and though the fences around that field were miserably poor the sheep never attempted to jump. Unless a person has wide range for his sheep he should not attempt to keep them at all. Small fields and restricted range do not fit in with sheep raising.

"What does it cost you to keep a sheep a year?"

As to this question, I do not know exactly, but I feel sure that the fleece pays for their keep, and the lamb is to the good and clear profit. If I get $6 for my lambs this fall I will consider that clear profit for the keep of the ewe and the raising of the lamb.

My fleeces this year, with the high price, 50c a pound washed, will more than pay for the annual keep. I said in my letter that I feed no hay. The oat straw I cosider worth nothing, as it has no market value. The turnips I feed I do not think cost me 2c a bushel to raise. I can grow potatoes almost as cheaply as turnips, and easier to grow, too, because there is no hand cleaning needed as in turnips, and I have such difficulty in getting help to clean and thin out my turnips. It is almost impossible now to get a man to get down on his knees to clean and weed and thin out turnips. We have a red variety of potatoes here that there is only a market for at certain times, but which yield big crops. I can grow 300 bushels of potatoes about twice as easily as 600 bushels of turnips on the same or like acre, and potatoes are nearly twice as nutritive as turnips. I think your various readers and correspondents are feeding too many roots and grain. It does not take much to keep a healthy flock of ewes through the winter and spring. I feed only about a half bushel of roots to, say, 10 sheep, and I think this is enough. I feed only an average of one-half lb. of oats a day during the six months of winter and spring. In very cold weather I do not feed any roots at all. I estimate that I feed on an average six bushels of potatoes and turnips and 90 lbs. of oats (average price 40c at threshing time), value $1.05. I do not think it costs me 2c a bushel to grow roots, but counting the labor of slicing them we will say 5c a bushel. This is 30c for the roots fed. Thirty and $1.05 makes $1.35 as the actual cost of the grain and roots fed per head during the six months' wintering. As to cost of pasturing, I do know that sheep should be charged anything for pasturing. Sheep, you know, "has a golden hoof." But the cost of FENCING is the chief item. This is impossible to even fairly estimate. As my fleeces this year averaged $2.50, this leaves a margin of $1.15 to pay for keep-up of fences, personal care, and I suppose interest, which is much more than enough to cover all those items. So I am quite safe in saying that the lamb in the fall at, say, $6.00 is clear profit.

Some people think sheep require little or no care. This is a big mistake. I have my sheep under my eye every day in the year, and I need to. At this time there are caked udders to be looked to; lambs not nursing, or lambs not taking all the milk from their dams. Ewes must be frequently milked, and ewes must be held for the lamb to suck. These things and many more occur every day. For these reasons I have my sheep run back and forth from the fields to the yard, and frequently around the house. In the heat of the day my sheep are lying around the yards, and they are in the shed every night. I think sheep require the most personal care of any animal on the farm, and if one is not prepared to give daily and constant oversight to his or her sheep they had better keep cows. Eternal vigilance is necessary to success with sheep. That's why there are so many failures with sheep. My neighbors talk jokingly about me and my sheep for never letting them out of my sight. "Nancy's sheep" is a by-word with them. But these same people, my good neighbors, cannot raise sheep. Less than a half dozen is the average around here. These people won't bother "fussing" around sheep. But the local papers are glad to print things about my sheep and my big profits from the sale of my wool and lambs. My lambs last fall weighed 135 lbs. on an average at selling time, and this was so unusual that it was in the papers. I do not wish to encourage anybody to go into sheep raising. My success with my small flock has no effect on my neighbors around here because they are all failures with sheep. I may say that my daughter is beginning to have good success with her sheep, "copying and following her mother's methods."

As to "What kind of fences?" I answer this by saying that I have no woven wire and little plain wire. I use the old-style rail or worm fence. The reason I use rails almost entirely is that I have thousands of them growing to the rear of my place a half mile away. If I use wire it will be close-woven wire.

In closing this letter I would say that if I were considerably younger, as things are, and forced to make my living on a farm, I would double my flock of sheep, for I think sheep raising very suitable work for a woman. True, there is work and bother about fences, and the fences must be closely watched, and one must be able and willing to at least temporarily repair them. I go over the fences every day, and always find low places and open places that must be at once repaired. The work is pleasant, and the profits in a year like this are phenomenal. There is probably none of our domestic animals compares with the sheep today as a money maker. They are also such innocent things, "the lamb of God," the emblem of purity. Abel was a keeper of sheep and offered "the firstling of his flock." Sheep are God's chosen animal. Bless them.

I almost forgot this question: Do I breed my spring lambs? Yes, I breed my lambs in the fall same as sheep. I do not believe in keeping a lamb two years for nothing. My yearlings this year have as good lambs as the old ewes, and plenty of milk for them too. Good strong ewe lambs in the fall should be bred.

(MRS.) NANCY McDONALD

Clover Seed Production in N. B.

For several years the officials of the Department of Agriculture for New Brunswick have been urging upon the farmers the necessity of producing more seed, especially of the grasses and clovers. Many thousands of dollars are sent out of the province annually which should be kept at home. In fact, it has been urged that this province, instead of being an importer, should be an exporter of seed. The tremendous rise in prices during the past few years has brought many farmers to realize the force of that which has been frequently urged by the officials.

The present season is proving one of the very best for the production of clover. Everywhere there are large stands of this plant. From several sections of the province prominent farmers have been writing to the department for instruction as to the best method of saving the clover plant. This work was to have been taken up by the Soils and Crops Division, but as both Mr. Newton and Mr. Reed, of this department, have entered military service, our plans did not mature.

On account of the conditions which exist this season, it was felt that something should be done along this line. The Honorable Mr. Murray has been looking for a competent man to carry on this work, and has succeeded in obtaining the services of Mr. O. C. Hicks, of Petitcodiac, a recent graduate from Macdonald College, P. Q. During Mr. Hicks' college course he specialized in cereal and seed work. He has spent the past few days visiting clover fields, and has presented his first report to the department. He states that he finds the growth of clover very general and of a very fine quality; but, upon examination of the plant, is of the opinion that, because of the excessive wet during the flowering period, the bees and insects necessary for the proper fertilization of the flower were not in general flight, with the result that there will not be a very large production of seed from the first growth, because of lack of fertilization. He recommends, however, that the clover fields be cut immediately and that a second growth be given every opportunity possible. If weather conditions are favorable, there should be a good production of seed in the second crop.

In the past whatever clover seed may have been saved in the province has been threshed with the ordinary threshing machine. As this machine will only partially thresh the clover, there is a very large waste. In order to save the larger portion of the seed produced it is necessary to thresh the clover with the regular clover huller. As this machine is quite expensive, and the work of producing clover seed is still in the experimental stage in this province, I have recommended to the Honorable Mr. Murray the purchase of a clover huller, to be operated by the department during this season for the actual cost of operation, on much the same plan as our ditching machine and limestone pulverizer are operated. I am pleased to say that the minister has accepted my recommendation and has instructed me to proceed along these lines.

I would be very glad to hear from farmers who have clover fields and who would undertake the production of clover seed. If sufficient farmers will undertake this production a clover huller will be purchased immediately and preparations made to assist in the threshing and hulling. For the benefit of farmers who are interested I would emphasize the following points:

First: The first crop of clover must be cut at once.

Second: All live stock must be kept off the mown fields, in order that the second crop may develop rapidly.

If those who care to undertake the work will write me, a representative of the department will be sent to inspect the plots, and if there is sufficient clover produced to warrant the sending of the machine into a community, the same will be done.—J. S. Daggett, Secretary for Agriculture.

A GOOD MARE'S DESCENDANTS

A farmer whose well-matched teams are the object of much praise disclosed the fact that nearly all his horses are descended from one 16-year-old mare. A remarkable similarity of type prevails throughout his work stock. They are all blacks and all of one stamp. All have clean-cut features, smoothly turned bodies, and hard, flat joints and cannons. The old mare is not quite so large as some of her offspring. She weighs about 1,600 pounds and stands 16 hands high. Her most impressive characteristics are a refined head, brilliant eye, stylish neck, deep chest, well-turned hips and croup, and legs of popular shape and superior quality. She has been a regular producer and has always been bred to big Percheron stallions. Her owner is an Illinois corn grower who keeps about one-third of his farm in mixed clover and timothy, where his horses graze when not at work. Last year he won the championship at the local colt show.

This is a typical example of the rather rare instances in which a high-class brood mare has been duly appreciated and suitably mated. It is surprising that so few cases of the kind are found. The good appearance of such a lot of horses is not the only advantage. These closely related horses are similar in disposition as well as in color and type. They look well any way they are hitched, and they work any way they are coupled or grouped in teams. Such a team is a source of continual satisfaction in performing the field work.

In founding such a desirable family of work stock this mare has undoubtedly been worth many times the price any one would have paid for her at any time in her life. She is only a grade mare, but her breeding capacity was fortunately recognized and fully utilized.—Breeders' Gazette.

The farmer and the farmer's wife are always busy. This may be made the excuse for leaving the cream separator unwashed. This is a filthy habit. The separator should be carefully washed after it has been used.

HORTICULTURE.

THE DIRECT SHIPPING OF APPLES

Buyers' Views of Direct Shipping of Apples

Although most of the Canadian apples sold on the British market pass through the wholesale apple auctions, a fair quantity is sold direct to the wholesalers at the secondary distributing centres. These dealers hold views almost equally divided for and against this method of doing business. Those who have been fortunate enough to get into communication with reliable shippers, careful in maintaining their standard of grade and quality, and sufficiently experienced to ship no fruit in an immature or over-ripe condition, or other than properly packed, are strongly, and in many cases enthusiastically, in favor of direct buying. Those whose experience has unfortunately been with dishonest, inexperienced, or undependable packers do not care to take the risks involved in long-distance buying, preferring to purchase according to their needs at the wholesale apple auctions, where the apples can be inspected and the grade and quality judged before bidding.

From the Shippers' Standpoint

It is believed that the comprehensive competition offered by the auction sales room is such that well-packed and graded apples (especially those that have acquired a special reputation for excellence), will bring as high a price there as is possible anywhere on the market. Many shippers, however, prefer to do business on a cash basis rather than to consign their apples for sale on their own account. They recognize that the price acceptable to a British wholesaler early in the season must necessarily be a safe one from this standpoint, and therefore probably lower than that which they might reasonably expect to receive if they took the risks themselves. But, as owners of a perishable product, they entertain constant suspicions of the honesty of commission selling on a distant market where they have no commercial representation; and, everything considered, they prefer a firm price definitely agreed upon before the apples leave their hands.

For the benefit of such shippers, interviews have been held with a large number of the wholesale apple dealers in the United Kingdom, and the statement below gives an estimate of the requirements of those who are interested in developing a direct business. These estimates have been made as conservative as possible, and in most cases, especially with box apples, the quantities could be increased if satisfactory connections were formed.

Mutual Confidence and Satisfaction Necessary

At the risk of repetition, it is desired to emphasize as strongly as possible that a permanent and direct business can only be built up on a basis of mutual satisfaction. Shippers who cannot guarantee their grade and pack had much better leave this business alone, as the British buyer cannot afford to pay good money for less than an assurance of getting what he has bargained for. It is of interest to note in this connection that the Fruit Branch of the Department of Agriculture are now furnishing copies of the reports of their inspectors on particular shipments, and such a report, covering, say, twenty-five to thirty barrels in a car, and attached to the bill of lading, will offer the buyer a degree of security that will be very much appreciated.

Financial Arrangements

Business is done on the basis of cash against documents. In a minority of cases the buyer opens a credit with a Canadian bank so that payment may be made in Canada on presentation of the bill of lading immediately the goods have been shipped. In most cases, however, a draft is attached to the bill of lading, payment to be made to the bank before the delivery of the goods. Whether one way or the other is adopted depends altogether upon the contracting parties, but in general it is believed that Canadian shippers will not find it difficult to secure any reasonable concessions from reliable importers on this side.

Apple Inquiries

In certain cases the willingness of the wholesaler to handle on commission is indicated in the Trade Inquiries. It is believed, however, that a commission business at small centres is not likely to prove satisfactory. It is difficult to gauge the quantities that can be absorbed at good prices at such a point; there are strong and varying local grade and variety preferences, and the demand is not comprehensive enough to bring the best prices at any one point for all varieties or grades likely to be offered; the dealer, interested principally in his percentage, is constantly tempted to overstate the consumption possibilities of his connection; there is no price publicity inducement to fair dealing on the part of the wholesaler as in the case of the auctions; and there is also likely to be some doubt as to the financial responsibility of the smaller firms. For these reasons, unless the shipper has good reason to believe that his connections are reliable, it is recommended that only a strictly cash business be done with the secondary centres. Consignments had better be sent to the large apple auctions.

In the Trade Inquiries the requirements of individual wholesalers are given. The figures represent, not the total quantities of apples handled, but the dealer's estimate of the quantities he is prepared to buy direct from Canada if prices can be agreed upon. The names and addresses of the inquirers can be obtained on application to the Commercial Intelligence Branch of the Department of Trade and Commerce, Ottawa.—J. Forsythe Smith, Leeds, England.

NEW BRUNSWICK FOREST SURVEY

Three field parties are now at work in New Brunswick, in connection with the forest survey and classification of Crown lands. The project is under the supervision of P. Z. Caverhill, Provincial Forester, subject to the general direction of the Minister of Lands and Forests. The size and importance of the undertaking is indicated by the fact that the Crown lands in this province comprise 10,000 square miles and return a direct revenue to the provincial treasury averaging more than $500,000 annually from timber alone, in addition to large revenues from the sale of hunting and fishing privileges.

The best agricultural lands are naturally along the valleys, where settlement has for the most part been concentrated. In some cases, however, settlement has extended to the uplands. Some of these lands are well suited for agriculture, but in other cases the settlers have apparently been attracted primarily by the timber or by the desire merely to locate a home, and have settled on lands wholly unfit for permanent agricultural use.

There is considerable pressure upon the provincial government for the opening up of new lands to provide for immigration and for the surplus native population. An important feature of the Act of 1913 was the provision for a classification of soils, with the object of directing settlement to lands really suitable for farming purposes. This wise provision is now being carried out, and the result will no doubt be to reduce to a minimum settlement upon the non-agricultural lands. The evil effects of such settlement may be seen in every province of Canada, and are due to the previous absence of a definite policy for the directing of settlement to lands really fit for that purpose.

The province of New Brunswick has undertaken to avoid the recurrence of such tragedies as were discovered by the Commission of Conservation to have been enacted in certain portions of the Trent watershed, Otario, where settlers were allowed to locate on poor, sandy soils, then chiefly valuable for their timber. With the removal of the timber and the exodus of the lumbering industry these settlers have been left stranded, with no opportunity to make a comfortable living, and faced with the necessity of constantly lowering their standards.

The work of land classification in New Brunswick is being carried on in connection with the timber estimate and mapping of Crown lands. The country is covered systematically and examinations of the soil are made at regular intervals. Beyond doubt the result will me the opening up of new lands for settlement and the establishment of new communities under conditions which will ensure comfort and a reasonable standard of living. This, in turn, will mean a permanent increase in the population of the province, by providing for the native surplus as well as for immigrants.

The Commission of Conservation has co-operated with the provincial government in laying the foundation for the land classification work, through the detail of several experts who have just returned from an extended trip to the several localities in which the field parties are now operating.—C. L.

AFTER-HARVEST CULTIVATION

The following extracts are from the report on Illustration Farms given at the annual meeting of the Conservation Commission in January, 1916:

Five of the farmers chosen to conduct illustration work had been practicing after-harvest cultivation previous to the visits of the commission's instructor. Since his visits twenty of the farmers have adopted this practice. Eighteen state that it has helped to keep down weeds, and that it has increased their yields and the profits from their farms.

George R. Barrie (Galt, Ont.): "Our experience with after-harvest cultivation has proven to us that it helps greatly in keeping down weeds and the land is in a better condition to withstand the drought the next year."

W. T. Hands (Perth, Ont.): "Excepting clover seed production and seeding, this is, in my opinion, the most important illustration. We find it pays from every standpoint, and as proof that this part of the work has been noticed, many of the farmers in this district are demonstrating its value for themselves, and the acreage increases yearly. Three years ago this was not done."

Thos. Hall (Brooklin, Ont.): "If one wants good crops he has to gang plow and cultivate after the harvest."

Thomas McDowell (Shawville, P. Q.): "After-harvest cultivation was not practiced in this community until three years ago, and now many farmers are doing quite a lot of it, and find it very profitable, for it usually insures a good catch of grass and clover, leaving the land quite porous and fertile."

Albert Schurman (Central Bedeque, P. E. I.): "I notice many of my neighbors are taking up this practice."—F. C. N.

Good fall pasturage is an important consideration on every farm where live stock is kept. Too little attention is given to provide it.

PRUNING AND GENERAL CARE OF ORCHARD TREES

When you are quite sure your land is in proper shape to receive your trees, and you are ready to set them out, trim out with a good sharp knife and clean cuts all broken and bruised roots. Some trim all roots back to five or six inches of the main stem, especially with pears; but unless the stem is very small I prefer to shorten the roots only as much as is necessary to remove injured and extremely long ones. Place the roots in as natural a position as possible, and fill in about them carefully with fine dirt well firmed down. Fill up the hole, and see that the tree is set good and solid; should be set two or four inches deeper than when it was in the nursery. Dwarf pears, which are budded on quince roots, may be set so that the union will come two or three inches below the surface, to prevent the tree from blowing over as it grows larger. Do not set deeper, or the pear stem may send out roots and in time get ahead of the quince root, resulting in a tree which is not a dwarf. A heap of dirt may be placed about the swelling where the union is made if the union comes above ground, and a few surface rootlets from the pear may serve as anchors; but the better way is to set a bit deeper, as just explained.

After the trees are set the tops may be trimmed according to the type of tree desired when it is mature. For Maine the open-topped, rather low-headed style is best. Most trees are two years old as they come from the nursery and have received some training there. Start the head, or first, branch about three feet or less from the ground. Three branches are considered by many to be an ideal number for apples. They should be disposed at different heights along the body of the tree, about three or six inches apart, and distributed as evenly as possible around the body as a central axis. These three branches should not be more than 12 or 10 inches in length. At the close of the first season's growth each of these branches should be treated as a separate tree, and if possible three subdivisions of these should be retained to supply wood for the next year's needs. These three branches should be cut back to about the same length as the first original three branches with which the tree started. This method should be followed each succeeding year. By using good judgment a symmetrical development will result. If you desire to modify the growth of a tree, remember to cut to an outside or an inside bud as you desire a spreading or an upright character. You should know whether the individual variety is normally of an upright or of a spreading nature, and vary your method of pruning to conform to your ideals.

It is important that you get a picture in mind of the mature tree as you desire it to look, and then by all means stick to it when training your young tree.

What has been written is especially for the apple, but applies in general to the pear. In forming the head of a pear, more branches may be left, however, and it may be started even lower. A well-grown pear tree may have as many branches as four or five, depending upon the condition of the roots. If roots have been badly bruised or broken so they must be severely shortened, then the branches left on the stem must be shortened and lessened in proportion. As soon as the tree is in bearing there will be less need of trimming or pruning. Dwarf pears are usually trained to the pyramid form, and must be handled differ-

Nearly Lost Little Girl from

DYSENTERY

She Was Cured By Using

DR. FOWLER'S

Extract of Wild Strawberry.

Dysentery manifests itself with varying degrees of intensity, but in well marked cases the attack is commonly preceded by loss of appetite, and some amount of diarrhoea, which gradually increases in severity, and is accompanied with griping pains in the abdomen. The discharges from the bowels succeed each other with great frequency, and the matter passed from the bowels, which at first resemble those of ordinary diarrhoea, soon change their character becoming scanty, mucous or slimy, and subsequently mixed with, or consisting wholly of, blood.

Never neglect what at first appears to be a slight attack of diarrhoea or dysentery may set in. Cure the first symptoms by the use of Dr. Fowler's Extract of Wild Strawberry.

Mrs. John Peterson, Radville, Sask., writes: "I cannot speak too highly for Dr. Fowler's Extract of Wild Strawberry. I nearly lost my little girl, aged three years. I took her to the doctor, and he told me her temperature was 104, and forbid me taking her out to our home, six miles from town, but I was forced to go on account of leaving my small baby home. We managed to get her home, but the fever did not go any lower, and we thought we would lose her sure, as she was so bad with dysentery she even passed blood. A neighbor came in and brought Dr. Fowler's Extract of Wild Strawberry, and told me to give her a few doses. This we did, and the next day she took a change for the better, but it was quite a time before she was on her feet again. I do believe if it had not been for 'Dr. Fowler's,' my little one would have died."

The genuine "Dr. Fowler's" is manufactured only by the T. Milburn Co., Limited, Toronto, Ont. Price, 35 cents.

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Here is something new in footwear specially suitable for farmers, woodsmen, millmen, trackmen, laborers—all those needing strong yet light, cool, easy shoes. These are made on good-fitting right and left lasts from our famous oil-tanned Skowhegan waterproof leather with waterproofed sole leather outsoles and solid insoles.

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are light weight, comfortable, durable working shoes for spring, summer and fall wear. Sold by leading dealers everywhere. If your merchant does not carry them write us, giving his name and address, and we will see that they are placed within your reach. Made 4, 6 and 9 inches high. 19

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As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,
HANTSPORT, N S.

ently from the standard or larger trees. The one-year-old nursery tree may be cut back to 12 or 15 inches and branches allowed to grow from near the ground to the top. Shorten most of the branches nearest the top, graduating them so that the bottom ones are longest. The symmetrical development of the dwarf pear when grown in this form depends altogether upon the annual pruning of the lateral branches It is usually best to cut back to an inside bud each year, as this tends to an upright, compact growth.

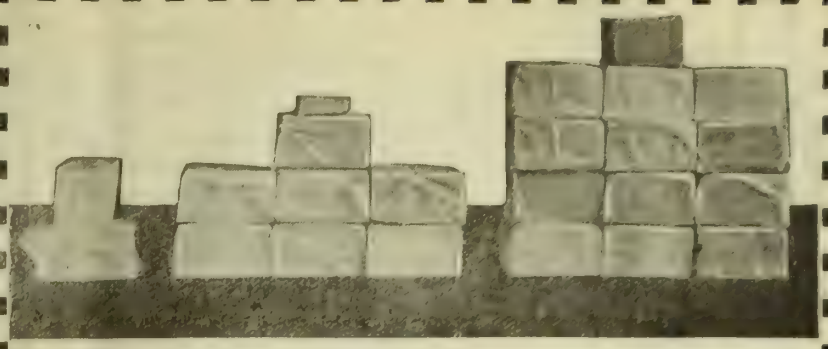
The plum usually bears early and abundantly, and so does not need so much attention once it has reached bearing age. Shorten back the branches to two or three good buds, and cut out the central leader when planting. Remove all but four or five of the branches after the first season's growth, but these need not be shortened. In succeeding years cut out any dead or interfering branches, and trim what is necessary to keep the tree in shape. Except the fast-growing, sprawling kinds, like the Burbank, the plum requires much less pruning than the apple.

Sweet cherries may be handled like the plum. Do what shaping you desire during the first three or four years, as the less trimming after that the better. Sour cherries require very little pruning, except to remove dead branches. as must be done for all trees. As it naturally forms a round, open head, the central leader may remain. If a branch must be trimmed, cut it out entirely, as you should all those that cross or interfere in the development of the tree.

The advantages of cultivation are so many, and ought to be so well understood, as not to need much attention in this article. With young trees just starting it is essential not only to give them the right soil, location, and a properly prepared place to live, but to so keep down the weeds and stir the soil as to keep them growing steadily. For a few years small crops like beans, potatoes, or small fruits may be planted between the trees and rows, thus your cultivation will do for both trees and "fillers." Grass and grain ought not to be allowed in the young orchard. Sometimes too much cultivation very late in the season will cause the young growth to be injured by severe winter freezes. This is not usual, as the average person will cultivate too little as a rule. However, the remedy is to cease stirring the soil early enough to allow the present season's growth to harden before freezing weather.

Blackberries and raspberries should be cut back to four or five inches at time of planting. Let them grow in the form of a hedge row, and keep of the E 8cmfwypshrdlubgkqjvbvb weeds out of the row by constant horse cultivation. At the end of the fruiting season cut out all the canes that have just fruited. With all tall growing sorts we like to pinch off the tops of canes when three feet tall, thus causing them to become bushy and prevent their bending over and snarling up. It is entirely possible to select varieties that are perfectly hardy and will not need winter protection.

Gooseberries and currants are similar in needs. Plant them early, and give thorough, shallow cultivation. Cut the gooseberry back one-half at planting time, and see that the soil is well firmed about the roots. The best fruit is borne on canes two or three years old. Prune to encourage new growth, and keep all old wood over five years cut out. Prune the currant the same as the gooseberry, but leave no wood older than three years. Unlike the gooseberry, the currant sprouts freely, so some of the young shoots will need to be removed each year. Four to eight stems are enough, and these should not be allowed to grow taller than two or three feet.—D. M. Grover, in Maine Farmer.



Separator running at full speed. Loss of butter 1.75 pounds

Speed reduced 10 revolutions. Loss of butter 7.28 pounds

Speed reduced 20 revolutions. Loss of butter 12.74 pounds

Which pile did *you* lose?

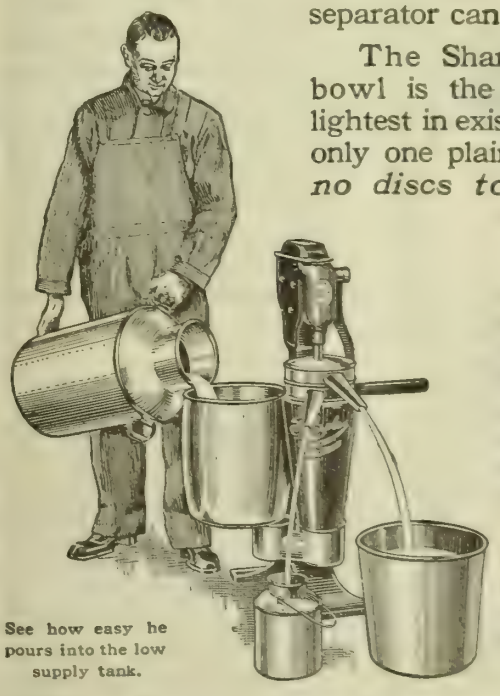
These figures from the Purdue Experiment Station Bulletin No. 116, show the loss in butter resulting from not turning a fixed-feed separator at exactly the speed stamped on the crank.

And investigations showed that 19 out of every 20 separator operators thruout the country turned their machines too slow much of the time.

THE NEW SHARPLES SUCTION-FEED

is the *only* separator made which *will not lose cream at varying speeds.* The wonderful "Suction-feed" always feeds the milk to the bowl in exact proportion to the separating force being generated. At 45 revolutions it *skims clean;* at 55 it *skims clean* and at 35 revolutions it *skims equally clean.* No other separator can do it.

No matter how you turn the New Sharples you always get *even thickness* cream. Just set the cream screw at the desired thickness and it will come out *velvety* and *even*—no matter how you vary the speed. No other separator can do it.



See how easy he pours into the low supply tank.

The Sharples Tubular bowl is the simplest and lightest in existence. It has only one plain part in it—*no discs to wash* and bother with.

All these and many other features explain why the New Sharples is the profitable separator for *you* to use. It is described in detail in catalog *"Velvet" for Dairymen.* Send for your copy today. Write Dept. 79.

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Prize Butter Makers Use Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 181

DAIRYING.

CALCULATING WHAT COWS ARE DOING

In virtually any dairy district, probably among the herds supplying one factory, it is possible to find contrasts running something like this: One herd of 14 cows gives on the average 7,732 lbs. milk and 248 lbs, fat; while a neighbor's herd of 14 cows averages only 4,037 lbs. milk and 155 lbs. fat. Indeed, in looking over the records in eleven district the average DIFFERENCE between the high-bred averages and the low ones amounted to 4,639 lbs. milk and 140 lbs. fat per cow. This is certainly an extraordinary difference, and indicates that it will pay to calculate what cows can do.

Take it another way: In 1914 sixty patrons of two creameries began this cow calculation, cow testing. It was found in 1915 that their herds had made a gain over their 1913 record of 71 pounds of fat per cow, a gain of 8 per cent. But, on the other hand, the 1913 patrons of the same two creameries who did not go in for cold calculation fell off 87 pounds of fat per cow, seventeen per cent.

If the men now cow testing had made gains with their cows in the two years as those made who were testing, it would have meant an increase in the output of 85,362 pounds of butter.

High in Quality
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YOUR roofing troubles will end when you invest in Everlastic Roofing. There is no better roofing value on the market, and no better made rubber roofing for any thing like this price. It defies wind and weather and insures dry buildings.

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Everlastic Roofing is made with all the care and skill that have made our other products famous. On any steep roof it will wear like iron. Doesn't run in summer heat or dry out in the cold.

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FEEDING FAT INTO MILK

According to all experimental work that has been done, fat cannot be fed into milk. This accords with the experience of observing and careful dairymen. It is, of course, possible to increase or decrease the fat per cent of the milk for a short time by creating some disturbance in the animal's digestion by improper feeding, or by some other method, either intentional or otherwise. However, this change in fat per cent will continue for a short time only, and the cow will later return to normal. It is also possible to bring cows up to freshening time in a somewhat fat condition, and they will for a time maintain a high fat percentage in their milk. As in the previous case, this fat percentage will not be maintained, and the cow will drop back to what is her normal percentage of fat.

The milk of each individual cow seems to possess a fixed composition that is natural to her. and under normal conditions the richness of the milk is in no way dependent upon the care or amount of feed fed, except that cows that are starved or greatly underfed may produce milk somewhat lower in fat percentage than normal. One is quite safe in saying that the kind of feed fed will not either raise or lower the average fat per cent of a cow; neither will it bring, in and of itself, temporary fluctuation in the fat per cent.—H. D.

KEEPING BUTTER

Butter is stored by the large commission men for periods of a year without serious deterioration in quality. This is done by having the tubs paraffined to prevent the escape of moisture and the entrance of molds, and by having the temperature very low and constant.

Butter to be kept for some time should be put up in large tubs rather than in small packages, as loss will be less, and the amount of butter which may be off flavor due to being on the outside of the package will be correspondingly less. When you wish to take one of the tubs out of storage, remove the butter from the tub and immerse it in weak brine. In this condition it will keep uptil used.—G. F. S.

Recent tests showed that virulent tubercle bacilli in matter taken from a tuberculous cow, spread thinly upon glass, wood, and muslin exposed to sunlight out of doors, were all dead after 30 minutes of such exposure; whereas bacilli from same source and prepared in exactly the same way, but placed in a dark room, were alive and virulent after 30 days had passed. As the tubercle bacilli are more resistant to the germicides than most other varieties of disease germs, it appears that sunshine may be made a valuable adjunct to the business of a breeder of live stock as elsewhere. The cheapest and most effective of disease destroyers and health preservers, it should be admitted freely to barns, stables, and yards, as well as to our homes.

REMEDY FOR CLOVER BLOAT

Whenever cattle are turned into clover or alfalfa pasture there is some danger of bloating or tympany. This is especially true if the pasture is heavy and the cattle are hungry and unaccustomed to this kind of pasture.

During the spring of 1913 an unusual growth of white clover in the pastures of Central Kentucky caused the occurrence of several severe cases of bloat. This was brought to the attention of the state experiment station, and a study was made of the subject to see if some remedy could be found.

It is well known that bloat is nothing more than an accumulation of gas in the rumen or paunch of the animal, and the first problem was to find the

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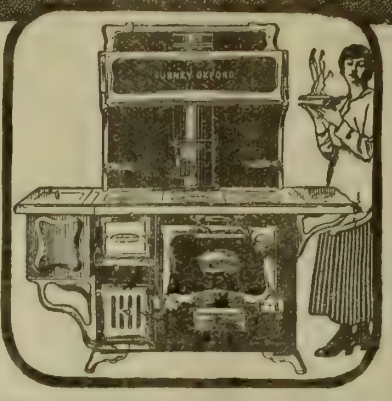

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THE oldest line of steel beam plows in the Dominion, made in the old Wilkinson Plow Co's factory, by old Wilkinson Plow Co. experts—every one of them men who know their business. It is **the standard line of plows** and includes 25 or more styles to choose from. U. S. S. Soft Center Steel Moldboards, highly tempered and **guaranteed** to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plow is fitted especially with its own pair of handles—rock elm, long and heavy and thoroughly braced. The long body makes it a very steady running plow. Shares of all widths — specials for stony or clay land.

General purpose, light, medium, and heavy, side hill, sod, drill or one horse plows

The plow shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. *Ask for new booklet.*

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HINMAN
THE UNIVERSAL MILKER

$60.00 PER UNIT is the price of the HINMAN since July 1st, and if the price of raw material continues to advance, we will be forced to make another raise shortly.

The HINMAN is the best machine for VALUABLE COWS; we can prove it.

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Butter Parchment At Farmer Office, Sussex

source of the gas. The two investigators, Healy and Nutter, found that the blossoms of clover and alfalfa contain considerable sugar, there being about 3.6 per cent by weight in red clover blossoms, 2.8 per cent in alfalfa blossoms, and 2.4 per cent in white clover blossoms, whereas in the blossoms of blue grass and in the leaves of clover and alfalfa there was less than 1 per cent.

By experiments they found that when clover and alfalfa blossoms were ground, mixed with water, and allowed to stand at about 102 degrees F., quite a considerable quantity of carbon dioxide gas was formed by the fermentation of the sugar. This is doubtless what takes place in the stomach of the animal.

As a remedy for bloat, the experimenters tried a drench of formalin with several cases, and found that it not only relieved the trouble but also caused no bad after effects. In view of these results the Kentucky Station recommends the following treatment for acute bloating: Drench with one quart of 1½ per cent solution of formalin, and place a wooden block in the animals mouth; if possible, exercise lightly. One-half ounce of commercial 40 per cent formalin in one quart of water makes the proper solution for the drench.

AYRSHIRE RECORDS

In the report of 25 Ayrshire cows and heifers that qualified in the Canadian Record of Performance from May 15th to June 30th 1916, it has again been demonstrated that Ayrshire cows are not only BIG producers but HIGH testers. All but one have a yearly test of over 3.50 per cent fat, the majority varying between 3.80 and 4 per cent. Nine cows tested over 4.15 and two tested over 4.50 per cent cat. There is a noticeable increase in the average production in butter fat among Ayrshires since the commencement of the R. O. P. test, as the following summary will show:

Altogether to May 1st, 1916:

224 mature cows gave a yearly average of 10,254 lbs. milk, 413.90 lbs. butter fat.

74 four-year-olds gave 9,358 lbs. milk 380.77 lbs. fat.

154 three-year-olds gave 8,447 lbs. milk, 346.71 lbs. fat.

318 two-year-olds gave 7,532 lbs. milk, 311.19 lbs. fat.

Average for the 770 cows and heifers, 8,682 lbs. milk and 354.80 lbs. fat. Average per cent of fat, 4.08 per cent. —W. F. Stephen, Secretary of the Canadian Ayrshire Breeders' Association, Huntingdon, Que.

NEVER TRUST THE BULL

News reports the past week record that three farmers were gored to death by bulls. In no instance was it related that the bull was ugly. It usually is the good bull that kills, the kind stallion that maims, and the trusted horse that runs away. In other words, a reputation for a kindly disposition lulls the farmer into a sense of security for which he sometimes pays with his life. The ugly bull is not turned to pasture; the "man-eating" stallion is carefully handled; and the skittish horse is driven with a control bit and is carefully tied when a stop is made. Extra-hazardous indeed is the risk of the farmer who deals with stock. He is safe enough with chickens and ducks, but infuriated turkey gobblers even have killed children.

Almost every other animal will bear watching—constant, close watching. Especially is this true of the males of the species, notwithstanding Kipling's estimate of the deadly qualities of "the female of the species."

The man who goes to sleep on a job, whether on the congested streets of the modern city, on the country road with its burden of speeding motor cars, or in the barn or pasture around the stock, is bidding for the services of the undertaker. It is not wise to boast that the prize winning bull, tended with infinite care by the herdsman, has "never done a mean thing." It is foolish to allow affection for a stallion to close "the weather eye" when working with him. The instinct primeval breaks out ever and again in civilized man, when he runs amuck and murders, and why should we imagine that it is more nearly subjugated in animals through years of domesticity? Eternal vigilance is the price of safety on the farm.

CARE OF CREAM CANS

A collection of dirty, dinged cream cans is an unsightly thing whether at the creamery, in course of shipment, or on the farm. It is the custom for creamery operators to wash cans and thoroughly scald them before they are sent back to the patrons, so that the only responsibility which rests upon the shipper is to see that the cans are kept in a sanitary plcae on the farm. In many cases very little attention is paid to the care of the cans when not in use. Too often they are allowed to lie around the stable, where the hens and other stock have access to them. To prevent dust getting into the cans the lids are frequently left on, resulting in a musty, close smell which is decidedly detrimental to the quality of the milk or cream to be shipped. To avoid this the lids should be taken off the cans as soon as they reach the farm and the cans turned bottom end up to insure the drainage of any water and also admit fresh air. The best plan is to keep the cans on the south side of the dairy on a shelf built for the purpose, where cans will receive the direct rays of the sun. Direct light of this kind is very important and a complete germicide. It dissipates any musty smell and leaves the cans sweet smelling and clean. To protect the cans from the rain it is advisable to build a roof over the shelf at sufficient height so that two tiers of cans may be put under it.

REGULATING CREAM BUYING STATIONS

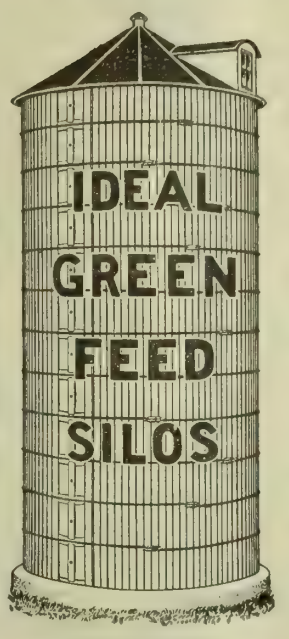
Dairy authorities in Manitoba and Saskatchewan have rightly concluded that the average cream gathering station, without proper supervision, is a detriment to the dairy industry. Legislation has been drafted to regulate these institutions in both provinces. The practice of assembling cream and milk in the general country store, hardware store, or butcher shop cannot be considered as providing conditions which are conduce to keeping it clean and sweet. The natural result is that it reaches market in poor condition and a reduction in price to the consumer must follow.

This progressive step toward the improvement of dairy products is to be highly commended. These gathering stations have long been recognized as a menace to the dairy industry. They must be strictly improved under most careful supervision.

Order Your Silo Now and Get Extra Profit at Every Milking

Don't try to go through another winter without silage. You cannot afford to. Feed is too high priced, and dairy products are too valuable. Order your Ideal Green Feed Silo now, and be prepared to get 25 per cent more milk from your cows and at the same time reduce your feed costs 15 to 20 per cent. There is no time to waste now. Get your order in at once, so that you will have plenty of time to erect your silo without rush or extra expense.

The Ideal Green Feed Silo Insures Good Silage



MADE IN CANADA

You cannot expect good silage from a makeshift silo. You cannot make or save money by buying such a silo, no matter how low its cost. Low price is not what makes a silo a good investment. It is the quality of the silage you get out of a silo, and the number of years of service it will give, that determine its value.

Every feature of the Ideal is the result of long experience in silo manufacturing. Every detail in the selecting of the material and the manufacturing and fitting of the parts, is clearly explained and illustrated in our large silo catalogue. There is nothing obscure or indefinite about the extra value you get in an Ideal.

Ask for copy of this catalogue, and read it. You will then see how carefully the material is selected, the staves milled, splined and fitted together, and secured against the tremendous pressure of the silage; and how the staves are treated with a preservative that protects them most effectually against the acid in the silage.

The man who buys a cheap silo in the hope of saving a little money on the first cost is very likely to lose a great deal more than he hopes to save. It would be foolish to put $160 worth of silage into a $175 silo, and lose $75 worth of silage simply for the sake of saving a little on the first cost, when, by paying $25 more and getting a good silo, he can prevent the loss of $75 not only once, but every year he uses the silo.

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LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos.
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LIVE STOCK.

SOME COMMENTS ON THE HEAD OF THE PIG

Through various processes of breeding, man has wrought a remarkable change in the conformation of the pig. Perhaps in no one respect is this more notable than in the head. The wild pig, from which the domesticated one is descended, has a comparatively long and narrow head. The common wild pig, which is found in considerable numbers today in some of the more isolated parts of Europe, the native Guinea pig, the Babirussa of the Indian Archipelago, and the wart hog of South Africa, all have long, tapering snouts.

Darwin regarded the domesticated pig as derived from two sources—the common wild pig of Europe (Sus scrofa) and the aboriginal pig of India (Sus indicus), the parent form of which is unknown. This Indian pig, it has been assumed, had a short skull, and the Chinese type brought to England and America a century or more ago is believed to have descended from this species. The crossing of the Chinese breeds on the common European type shortened the head and changed its character in a remarkable degree.

Commenting on the change of skull, Darwin states that the modification in the most highly cultivated races is wonderful. He says: "The whole of the exterior in all its parts has been altered; the hinder surface, instead of sloping backward, is directed forward, entailing many changes in other parts; the front of the head is deeply concave; the orbits have a different shape; the auditory meatus (external ear) has a different direction and shape; the incisors of the upper and lower jaws do not touch each other, and they stand in both jaws beyond the plane of the molars; the canines of the upper jaw stand in front of those of the lower jaw, and this is a remarkable anomaly . . . The whole head is much shortened; thus while in common breeds its length to that of the body is as 1 to 6, in the 'culturracen' (quoting Nathusius) the proportion is as 1 to 9, and even recently as 1 to 11."

The earliest illustrated English writings on the pig show both long and short heads. In fact, 50 years ago the short head was much more popular in England than at the present day. I have in my possession a collection of engravings of prize English pigs, shown at Smithfield and elsewhere, as far back as 1867, and these in most cases show heads of extremely short form. A reaction has taken place, however, and the visitor to the British shows will not be impressed with the prevalence of abnormally short heads. The Tamworth has been brought down to date with a head of considerable length. The Berkshire has passed through various interesting phases of head development, exceeding any other common breed in the shortening process. The Large Yorkshire 15 years ago was bred in England to have a more or less upturned snout, though in no extreme sense. Today this type of head is not in favor, and the judges prefer the longer, plainer sort. The Berkshire in Great Britain as a rule has a head with a slight upward curve of snout and fair length. In America many of our breeders have sought to produce the short, dished face, or pug face, as it is sometimes termed. Each of the best-known American breeds is looked upon with most favor by the judges when the head is short and broad. As to whether the skull shall show a dished turn or not will depend upon the breed.

The head of the pig in itself is of secondary value when it reaches the butcher. Therefore, the greater the proportion of skull to body the smaller the percentage of high-class cuts to be secured from the carcass. I have seen Tamworths on the show circuit in the last few years that possessed a maximum length and weight of head, so that it seemed to me they carried a most undesirable percentage of head to body, resulting in unnecessary waste.

It as long been recognized that the various parts of the body have a distinct relationship to functional purposes. The head of the pig is especially adapted to rooting in the ground and there seeking for food. Sidney states that "the wild hog buries his snout deep, rooting the earth up in a straight line before him; the tame hog turns it up right and left, here and there." Nathusius, the great German authority, claims that rich and abundant food given during youth tends by some direct action to make the head broader and shorter, and that poor food works a contrary result. "He lays stress," writes Darwin, "on the fact that all wild and semi-domesticated pigs, in plowing up the ground with their muzzles, have while young to exert the powerful muscles fixed to the hinder part of the head. In highly cultivated races this habit is no longer followed and consequently the back of the skull becomes modified in shape, entailing other changes in other parts."

The length and character of the head, to a certain extent, seem to have a most important relationship to the size and reproductive capacity of the breed. This fact appears more or less apparent and is conceded by many breeders of experience. When the tendency has been to breed short, dished faces these have been associated with reduced size and breeding capacity. The Small Yorkshire breed, now about defunct as such, was a monstrosity in head development, and it was also the smallest, chunkiest, and most useless of our breeds. The Berkshire, one of the great breeds from more than one point of view, has in recent years been going through a head evolution that puts such a premium on the abbreviated front as materially to injure the value of the breed. The question may be asked in all candor: Is not the breeding of the short heads on the Berkshire associated with distinct deterioration of valued characteristics of this breed, notably size and fecundity?

The present-day demand for pigs of any breed calls for size and quality. It is to be noted, first, that females of the large breeds that produce good-sized litters are plain headed; and, second, that among the medium-sized breeds the large individuals, the brood sows of which farrow the largest litters, are the ones with the plainer types of head This being so, then it may be assumed that many of our breeders have gone too far in their attempts to produce short, fancy heads. To the contrary, the breed would fare

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Look at the many features which are found only in the Magnet. Solid square gears, perfectly balanced, which run true without oiling, without effort and never wear away like cheap worm gears. They have the heft to carry the weight of milk so that there is no check-up in speed when the tank is filled. Skimmer is one piece and open—it can't clog with dirt while separating and is easily cleaned by hand and a cloth. Double support to the bowl which spins on bronze cushion bearings at top and bottom. No wobbling, so skims clean even when on rough ground. Weight of machine is low down. No need to screw down to levelled up floor.

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Each week we receive letters from farmers in every province of Canada telling us of the great satisfaction their "Magnets" are giving. George Telfer of Paris, Ont. has run his Magnet twice a day for seventeen years paying only a few cents for repairs Every owner is proud and enthusiastic because the Magnet never gives the least bit of trouble. They like the easy running and appreciate the perfect skimming of this honestly built separator. They're glad of the time it saves, because it's so convenient for cleaning. And they know it's a lifetime investment that's paying returns now and will pay them years from now.

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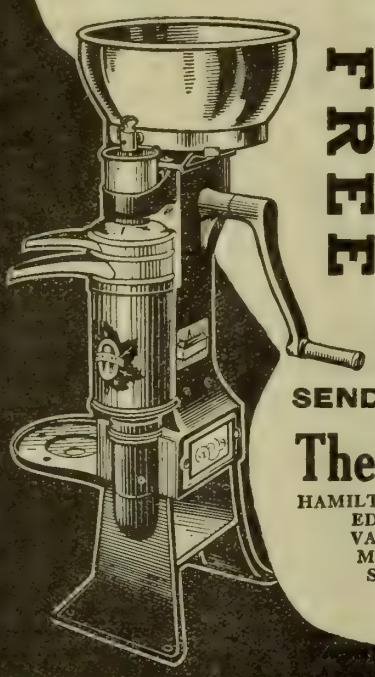

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Every 10c Packet of WILSON'S FLY PADS
WILL KILL MORE FLIES THAN $8.00 WORTH OF ANY STICKY FLY CATCHER
Clean to handle. Sold by all Druggists, Grocers and General Stores.

better if heads of medium length were produced, combined with quality, refinement, and smoothness enough to bear evidence that the other parts of the body were in keeping with superior production of flesh and progeny.

It is interesting to note that the Poland-China of other days was large and somewhat plain of head. In this day of controversy regarding this breed the big type breeders show a class of stock comparatively free from short, wide heads and prematurely ripened bodies. The Spotted Poland-China now being so aggressively pushed, is meeting with favor because it furnishes scale and fecundity, so often lacking in the more highly bred, short-headed Poland-China. The Duroc-Jersey has met with remarkable popularity in the middle west, largely on account of its size and fecundity. Individuals of this breed naturally have a straight, strong, plain head, and it is to be noted that in cases where a short, slightly dished, refined hea doccurs as a rule the pig is of smaller and more refined character. Duroc-Jersey breeders must have a care or they will bring this breed to the point of self-defence that has occurred among the Poland-China men. —C. S. Plumb, Ohio State University, in Breeders' Gazette.

ASCERTAINING WEIGHT OF CATTLE BY MEASUREMENT

One of our subscribers has asked for a table or rule whereby the weight of live cattble may be ascertained by measurement. The following, reprinted from "Beef Raising in Canada," will doubtless prove of value to many of our readers:

Long experience in the cattle trade may enable a feeder or dealer to estimate an animal's weight fairly closely. At times, however, even the experienced are out when the scale is applied. The beginner, when the scales are not at hand, usually guesses either too high or too low. We have seen a 1,100 pound animal's weight variously estimated at from 850 to 1,250 pounds —a wide difference of 400 pounds, and that among farmers who had been raising cattle but usually selling per head in place of per hundredweight. This is but one instance of hundreds similar that have come under our notice in recent years.

Where the stockman does not have a scale the foregoing table of weights based upon heart girth measurements will be found to give an approximately fair idea of the animal's weight. The girth should be taken just back of the shoulder and forelegs at the place where the body is shallowest. This place may be found by drawing the tape back and forth a few times before tightening to take the measurements.

Heart Girth.		Store Cattle. Fair condition	Store Cattle. Good condition	Fat Cattle. Fair condition	Fat Cattle. Good condition
Ft.	In.	Lbs.	Lbs.	Lbs.	Lbs.
5	0	650	700	700	750
5	1	675	725	725	775
5	2	700	750	750	800
5	3	725	775	775	825
5	4	750	800	800	850
5	5	775	825	825	875
5	6	800	850	850	900
5	7	825	875	875	925
5	8	850	900	900	950
5	9	875	925	925	975
5	10	900	950	950	1,000
5	11	925	975	975	1,025
6	0	950	1,000	1,000	1,050
6	1	1,000	1,050	1,050	1,100
6	2	1,050	1,100	1,100	1,150
6	3	1,100	1,150	1,150	1,200
6	4	1.150	1,200	1,200	1,250
6	5	1,200	1,250	1,250	1,300
6	6	1,250	1,300	1,300	1,350
6	7	1,300	1,350	1,350	1,400
6	8	1,350	1,400	1,400	1,450
6	9	1,400	1,450	1,450	1,500
6	10	1,450	1,500	1,500	1,550
6	11	1,500	1,550	1,550	1,600
7	0	1,550	1,600	1,600	1,650
7	1	1,600	1,650	1,650	1,700
7	2	1,650	1,700	1,700	1,750
7	3	1,700	1,750	1,750	1,800
7	4	1,750	1,800	1,800	1,850
7	5	1,800	1,850	1,850	1,900
7	6	1,850	1,900	1,900	1,950

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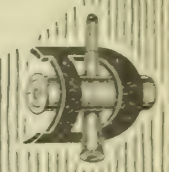

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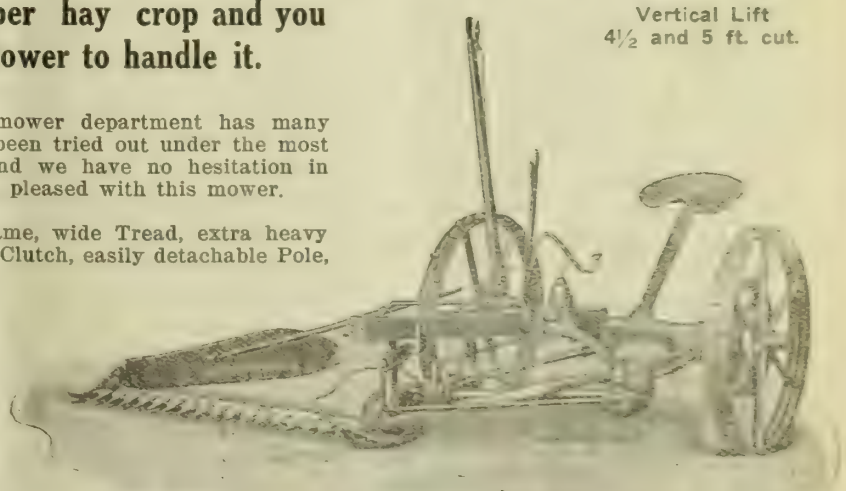
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THE HORSE

SLOPING SHOULDERS IN SADDLE HORSES

On perfectly smooth surfaces height of action is a waste of energy and the forward drive of the hind leg will accomplish less distance when the weight of the horse is raised too high into air. Runners or trotters of extreme speed are apt to have daisy-clipping habits. The harder the drive the longer the stride, because the body is driven farther in its trajectory before the feet again strike the earth. A horse will adapt its action so far as possible to the ground it has to cover, but if its conformation is such that it is naturally under-actioned and somewhat over-driven from behind it will be more difficult for the horse to adapt itself than when its action is shorter and more collected.

On the other hand, extravagant knee action is rough and wearing. Many a horse gets the prize for high action which is merely a chopper. A horse should have natural action adapted to the job which it is to do; otherwise the farm horse would be stubbing its toes and the saddle horse be unequal to traversing rough ground with safety.

With the saddler sloping shoulders are of first importance. A horse with an oblique shoulder always has a leg to spare and can recover after stepping on a rolling stone, or if the ground gives way beneath. No woman should ever be allowed to ride a bad-shouldered horse. Observation of straight-shouldered horses will at once reveal that their forelegs are so placed as to make recovery from a misstep extremely difficult, and the hind quarters cannot be brought up under them to aid recovery so effectively as can those of horses with sloping shoulders.

A horse with a sloping shoulder may have a daisy-clipping action, stub its toe, stumble often, and yet always recover. Such horses are aggravating to ride, but they may be quite safe. By rounding the toe of the front shoe to the natural wear of the hoof and bringing the hind quarter under with sufficient length of bearing on the hind shoe they often become perfect saddle horses on rough ground. A straight-shouldered horse has its forelegs too far under, and cannot throw support forward as quickly as needed; its effort after stumbling is quite different from that of the sloping-shouldered horse, which easily throws the succeeding leg forward so that it takes the place of the leg that failed. The straight-shouldered horse can only partially accomplish this; there is too much weight falling forward of the center of gravity of the foreleg, and if the horse recovers from the overbalance of weight it is by a succession of efforts, each one in itself difficult and incomplete.

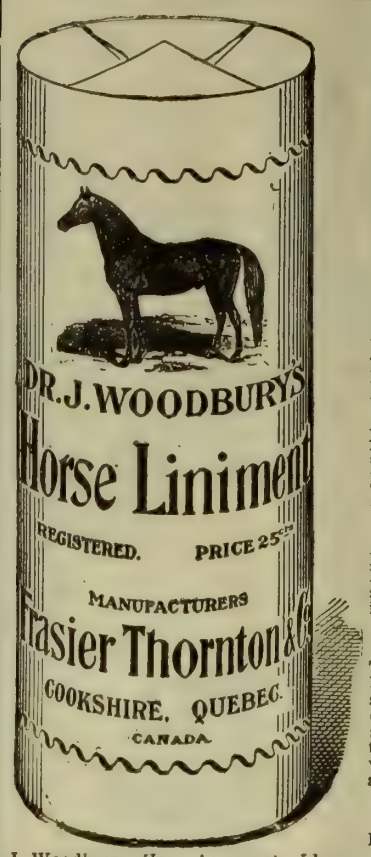
If the tasks imposed are hard enough, whether leaping, running stock, or excessive road work, a horse is bound to fall sometimes; but the moment between the mistake and the fall will give the rider a chance to get clear. It is much more easy for the rider to retain the center of gravity on an oblique-shouldered horse than on the other kind, which carries over so suddenly the plane on which the rider sits that there is a likelihood of falling immediately in front of the horse. This hardly ever happens with a sloping-shouldered horse, the rider going to one side or the other. One horse represents a straight fall, the other a roll down a slope. Unless very sluggish, horses do not like falling. The muscular, straight-shouldered horse does what it can to remedy the defects of its conformation, but the fact remains that when both horses are put to the extreme stress that threatens overthrow the sloping-shouldered horse can recover and the other can not.—L. Ogilvy.

HOT WEATHER RULES FOR THE HORSEMAN

1. Load lightly; drive slowly.
2. Stop in the shade if possible.
3. Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swallows if he is going to stand still. Do not fail to water him at night after he has eaten his hay.
4. When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose, and mouth, and the dock. Wash his feet, but not his legs.
5. If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge. Use vinegar water if possible. Do not turn the hose on him.
6. Saturday night give a bran mash, lukewarm, and add a tablespoonful of saltpetre.
7. Do not use a horse hat unless it is a canopy-top hat. The ordinary bell-shaped hat does more harm than good.
8. A sponge on top of the head, or even a cloth, is good if kept wet. If dry, it is worse than nothing.
9. If the horse is overcome by heaat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of warm coffee. Cool his head at once, using cold water, or if necessary chopped ice wrapped in a cloth.
10. If the horse is off his feed, try him with two quarts of oats mixed with bran, and a little water; add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.
11. Watch your horse. If he stops sweating suddenly, or if he breathes short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sunstroke and needs attention at once.
12. If it is so hot that the horse sweats in the stable at night, tie him outside with bedding under him. Unless he cools off during the night he cannot well stand the next day's heat.

Dr. J. Woodbury's Horse Liniment

THE INFALLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

Truro, N. S.
This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
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Dear Sirs:—Kindly send me 6 dozen bottles Dr J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

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Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

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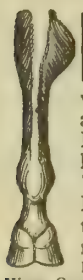

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Dr. Chase's Ointment Cured When Baby's Body Was Covered With Distressing Eczema.

If every mother could try Dr. Chase's Ointment for the chafing, skin irritation and resulting eczema which tortures so many babies, what a blessing it would be for the little ones.

This letter will give you an idea of what a wonderful work this Ointment is doing in the way of bringing comfort to children who are so unfortunate as to contract eczema. It is so easy for this trouble to develop from chafing or irritation caused by the clothing, and so difficult to get it cured, that Dr. Chase's Ointment is appreciated when once its healing qualities are known.

Mr. M. L. Duclos, Postmaster, Dugnayville, N. B., writes: "I believe it is my duty to recommend Dr. Chase's Ointment as a cure for eczema. My baby was seized with eczema and his face and arms were covered with this terrible disease. After trying all sorts of ointments the disease continued to spread until it covered the entire body. When the itching became bad he would scratch himself and was sometimes found in his cradle covered with blood. Hearing about Dr. Chase's Ointment I bought two boxes and before this was all used the child was cured. That was a year ago, and there has been no trace of eczema since. I recommended Dr. Chase's Ointment to all who suffer from eczema as being the best treatment in the world for itching skin diseases."

Dr. Chase's Ointment is for sale by all dealers at 60 cents a box. It is a good idea to keep it at hand along with the bath soap to be used for roughness of the skin, chafing or irritation. Prevention is so much better than cure. Powders clog the pores, but Dr. Chase's Ointment cleanses the pores and thereby keeps the skin soft and smooth. Sample box free if you mention this paper. Edmanson, Bates & Co., Limited, Toronto.

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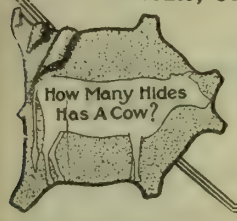

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IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARITIME FARMER.

POULTRY

COMMON DISEASES OF POULTRY AND TREATMENT ADVISED

A bulletin has just been compiled by the director of the Laboratory for Poultry Investigations and Pathology, Animal Industrial Division, North Carolina Experiment Station, West Raleigh, and is especially intended for practical poultry keepers. The treatments recommended are the result of the writer's experience.

Against poultry lice (Menopon biseriatum and M. Pallidum on chickens; Gonoides stylifer on turkeys; Lipeurus baculus on pigeons) a very effective insect powder is made by taking crude carbolic acid one pint, and gasoline three pints, mixing with sufficient plaster of paris to make a slightly moist mixture, then rubbing it through a sieve. Let it lie for about two hours, when the powder will be found to be dry. If not used at once it must be kept in a well closed can. A bird thoroughly dusted with this mixture need not be redusted for three months.

Against the large head louse (M. biseriatum) a good treatment is to grease the top of the head with plain vaseline or lard if the chicks are young, while older birds are best treated by either dipping in a good coal tar dip or by dusting with an insecticide.

Against mites, cleanliness, disinfection, and dusting with the insect powder mentioned above are recommended.

Against scaly legs first soak the scabs in warm water, then with a brush remove all scabs possible, after which scrape with a dull knife. When the legs are dry, saturate with gasoline. Repeat this treatment every five days. A hot solution of lime and sulphur dip has been used with excellent results.

Internal Parasites

The large round worm (Acaris inflexa) is present in over 25 per cent of the birds purchased on the market. As a preventive measure the yard and fowl house must be kept clean. As treatment the birds should be made to fast for 24 hours, then give each bird one teaspoonful of olive oil and one teaspoonsful of turpentine separately.

The tape worm is treated by fasting the birds 24 hours and then giving them a tablespoonful of turpentine and a tablespoonful of epsom salts dissolved in hot water. If it is desired to avoid medicating each bird separately, give three gains of powdered areca nut to each bird in a mash of wheat shorts.

The gape worm forms clusters in the trachea of many birds and it is treated by extirpating them by means of a doubled horse hair or by a feather dipped into turpentine.

Contagious Diseases.—Black head, or enterohepatitis, affects turkeys and more rarely chickens. For its treatment permanganate of patash may be used in the water. Sulphocarbolates of calcium, sodium and zinc in equal parts have given good results in doses of half a grain of the mixture three times a day for each bird.

Fowl Cholera.—Intestinal antiseptics are indicated. Permanganate of potash can be used as recommended under black head. Also the three sulphocarbolates are valuable, as well as a solution of one part of bichloride of mercury in ten thousand of water.

White diarrhoea caused by Bacterium Pullorum has been successfully controlled by the sulphocarbolates mentioned above.

Chickenpox or sore head may be treated by touching the sores with carbolic acid, or with iodine, or kerosene. Sick birds should also be given a tablespoonful of castor oil.

Roup or avian diphtheria is a highly contagious disease, and if the bird affected with it is not a valuable one it is better to destroy it. If it is desired to treat it, the nasal canal must first be syringed with a 20 per cent solution of bicarbonate of soda to dissolve the mucus; then with equal parts of peroxide of hydrogen and water so as to cleanse thoroughly the parts, after which the following mixture should be injected:

Oil of Thyme 30 minims, oil of eucalyptus 20 minims, menthol 10 grains, oil petrol 2 ounces. All these liquids should be warm. The ulcers in the mouth are to be touched with a stick of nitrate of silver.

The Bake-Day Smile!

Little Miss MAIDEN CANADA

Supreme Chocolate is a pure, unsweetened, cooking chocolate, easily melted and mixed, containing that rich chocolate flavour that can only be obtained from the finest cocoa beans. For icing and filling cakes on bake day—a pleasant surprise awaits you, write for Cowan's Dainty Recipe Book and try out the recipes—mailed free.

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A-60

TAKING HENS THROUGH THE MOLT

The annual molt, which starts with the arrival of dog days, is a most critical time in the life of hens. Shedding old feathers and growing new ones comes when the vitality is at a low ebb. In a normal molt about four months are required for a complete change of plumage, the first feathers beginning to fall about July 1. At first the egg production does not materially decrease, but as the process advances the drain on the system increases until the production gradually diminishes toward September 1. Usually egg laying will not commence again until the new set of feathers is complete.

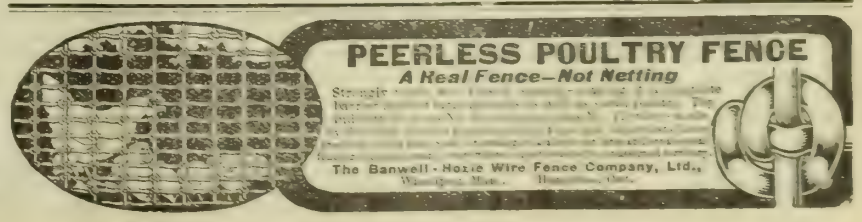
If, however, the poultryman is fortunate enough to bring his hens successfully through the molt and get them laying by mid-November, the fowls will probably continue to lay throughout the winter. Thus poultrymen wishing to produce winter eggs for market are very anxious to get their hens through the molt at an early date.

In order to accomplish this end some advocate forcing the molt. This may be done by practically starving the hens for a week or ten days and then putting them on a heavy ration of rich food. While this does cause a quick molt, experimental evidence does not show it promotive of good later egg production.

The feeding of molting hens should not differ greatly from that of laying hens. Both eggs and feathers are rich in nitrogen, so a food adaptable for eggs will also make feathers. However, the latter are richer in oil than eggs, and some food of oily nature should be added to the ration to supply this want. It has been conclusively proved that a liberal amount of sunflower, flaxseed or oil meal to the ration makes hens molt faster and leaves them in a stronger condition and with more vitality.

A spinster says an old bachelor is a man who has overlooked an opportunity to make some woman miserable for life.

The difference between a compliment and flattery depends on whether it is handed to you or some other person.



FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

Leaving the Old Home

Hester and Jacob Cross had a letter from their only son, which caused them both a great deal of anxious thought. "You see, father," so ran a portion of the letter, "I can seldom leave my business to go out to see you, it is such a long, expensive journey, and I must think of saving the dollars and cents, now that I have a wife and child to provide for; so I agree with my wife that it would be a good idea for you and mother to come out here—just close up the old place and come out here and live with us for good. No use trying to sell anything, for no one would care to buy such a little tumble-down house; and, if I remember right, there isn't a piece of furniture in it which is worth above a dollar. Just pack your clothes and a few things you value most and come right along and live with us."

"Don't you think Henry speaks a little too slightingly of the old home, Hester?" asked Jacob of his wife. "It was good enough for me and my father before me, and he had a good, comfortable bringing up in it."

"I s'pose he's got so forehanded that he can live in a way that makes the old things seem dreadful old, and he can't help it, Jacob," replied Hester, ready now, as in the time of her son's boyhood, to make excuses for his shortcomings. Yet there were plainly written upon her face lines of pain caused by some of the words in her boy's letter, which not even the seemingly sincere and hearty invitation to come and live with them could smooth out.

Yet her heart swelled with pride at the thought of leaving the old home of comparative poverty for her son's home, filled, as she judged by his letters, with all the luxuries and comforts which money could buy; and she endeavored to bring her husband around to her own state of mind, which was becoming each moment more and more favorable toward the project of breaking up their housekeeping and going to Glenfield to live with their son.

So it came about that the time for their departure was near at hand, and they were making ready to go.

"Might as well take all the things down and pack them in boxes, so if we should ever happen to want any of them we can send for them and have no bother about anything."

Jacob raised his thoughtful eyes to his wife's flushed face in careful consideration.

"I wouldn't, Hetty; they'll keep better just where they are, I think. Whoever comes for them can pack them. You need your strength for the journey; let everything stay just as it is, I say."

So they merely closed the blinds, curtains, and doors, as if retiring for the night, or going out to call on a neighbor for an evening, and started with fluttering hearts upon their long overland journey to Glenfield.

All the way Hester Cross dreamed longingly of the meeting so soon to be. She had never seen the dear baby, nor, indeed, its mother, her son's wife; but her great heart was fully prepared to take them both in and enshrine them beside Jacob and Henry, and the nearer she drew to her journey's end the more eagerly she anticipated the pleasure of meeting them.

At length, dusty and travel-worn, Hester and Jacob Cross stood upon the steps of their son's rather pretentious house, waiting for admission.

By some unfortunate mistake or omission, no one had met them at the station, and they had found their way to their son's house as best they could.

And no one met them cordially at the hall door, as would have been the case in their ow home if any one they loved had come to visit them. Instead, a servant came at length, and, with eyebrows raised, superciliously showed them with a doubtful air into a richly furnished parlor.

It seemed a long time to their weary eagerness before their son's wife, a vision of beauty, smiling, and with condescending air, came to meet them. She tried to make them feel at ease and amply apologized for the oversight of failing to meet them at the station, but in spite of all her efforts something was lacking and the father and mother from the "little old tumble-down house" away back in the country hoped faintly that the meeting with Henry and the baby would be of a character to warm up their chilled spirits and drive out that spectre which already wore the garb and appearance of homesickness and persistently sat in their inmost souls.

Shown to their room, which was a model of comfort and convenience, they rested and refreshed themselves, and waited, as they had been requested, till summoned to dinner, where they met their son for the first time in ten years.

They had no real reason to complain of any lack of warmth in their son's greeting, and he was genuinely glad to see them. The mercury of their spirits ran rapidly up; but still they had not seen baby.

Grandma felt that she was being defrauded, and ventured to speak of the desire of her heart.

"Baby? Oh, yes! Nurse shall bring her down for half an hour after dinner," was the smiling reply; and down to zero again dropped the mercury of grandma's hope, and grandpa sympathized with her.

But, oh, when that half hour came! Frail, but fair and sweet as one of her day lilies at home, grandma thought, and her heart went out to the little girl with a longing love and care for it in the old time ways in which she had nurtured her baby, her only one, the father of this one, but as different to it as the ox-eye daisy to the forget-me-nots.

Hester Cross clung to the child with loving tenderness, loath, when the limit of time was reached, to give it to the nurse, who waited for her charge.

"We'll see," she said, when she and Jacob were alone again; "we'll see if I am not to have any comfort with Henry's baby. That nurse girl shall not have everything her own way, but there's one thing she may have, and that's a rest."

Jacob looked thoughtful and said little. He saw further into matters than his wife. She, without being conceited, had more confidence in her own ability to do things for others in her own way satisfactorily to them, as well as herself, and in this case, as one or twice before, he felt that she was going to be disappointed.

Before he had time to speak a word in reply a door opened and closed somewhere near, and they heard the soft, modulated tones of their daughter-in-law in conversation with her husband.

"They are dear old people," she said in reply to a question of Henry's, "but I am afraid a difficulty will arise in regard to Lelna. I cannot have nurse interfered with in the care of our child."

"Undoubtedly mother will find her greatest pleasure in devoting herself to the interests of baby. What is the objection, my dear?"

"Oh, Henry! In these days of enlightenment, I wonder you have not learned better than to ask such a question. Without being actually diseased, your mother is old and probably in a weak state of health. If we allowed her to nurse baby and caress her as she did today to any great extent, we would without doubt be subjecting our delicate baby to almost certain infection that would be seriously, perhaps fatally, injurious to her health. Don't you think so?"

"I am afraid, my dear, that this is one of the few subjects upon which we differ slightly. When babies and their grandmothers are separated from each other by the newfangled notions you are learning at your meetings and clubs, there is a line drawn beyond which my sympathy will not reach."

The door closed sharply, and they heard the step of their son pass out along the hall and down the stairs.

The old couple looked at each other and each read in the eyes of the other the same thought. It was left to Hester to give expression to it, however.

"Jacob, our luggage is still at the depot; it shall never be brought into this house by my consent. I want to go home."

His lip quivered, but he smiled acquiescence, and hastened out to intercept his son, who might be going to attend to the matter of having their boxes brought to the house.

To say that Henry Cross was astonished and hurt does not express his state of mind when his father had caught his arm as he was turning a corner and hurriedly informed him of his mother's decision. Hurriedly, because if he had allowed his tongue to hesitate the old man must have weakly broken down.

"But, father, I don't understand. You have not been under my roof half a day—not long enough to find out if you like it or not," remonstrated Henry, in tones of perplexed vexation.

Yet his father, searching his face, saw a flash of something like relief pass over it; and, having a key to an inner chamber of his son's mind, he did not blame him, but gently persisted.

"It's an old folks' notion, boy; no use to fight it. We're as homesick as dogs, and we will stay all night with you and then start back to the old place. It's a mistake when folks as old as we think of transplanting themselves to a new place."

"Father, I cannot bring myself to consent to this—this most unreasonable desire of yours and mother's being carried out," the distressed young man replied. "Come with me down to the station and we will have your things take to the house and nicely placed, then you will feel more at home, and so will mother, and all will be right and pleasant."

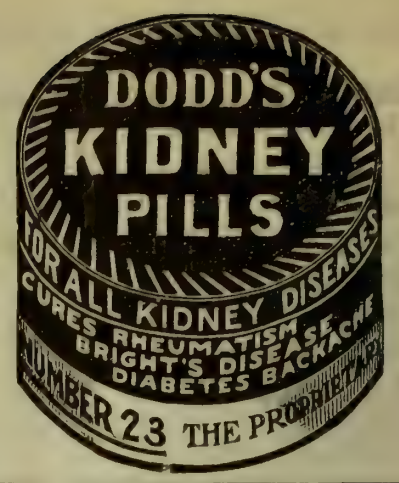
But no. Henry Cross saw that it was useless to try to persuade his father to alter his decision.

They went to the station, but it was to arrange for shipping their boxes back home—all but one.

"This is filled with country things which your mother and I thought you might like—apples from the old trees you used to like best, and a few extra nice vegetables."

The old man sighed as he thought that, having sold all their fruit and vegetables, they would be obliged to buy more to keep them through the winter months.

Henry's wife was delighted with the contents of the box, but her husband



A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry. palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by this method. Write today. Address: Mrs. M. Summers Box 309, Windsor, Ont.

I OWE MY HEALTH

To Lydia E. Pinkham's Vegetable Compound.

Washington Park, Ill.—"I am the mother of four children and have suffered with female trouble, backache, nervous spells and the blues. My children's loud talking and romping would make me so nervous I could just tear everything to pieces and I would ache all over and feel so sick that I would not want anyone to talk to me at times. Lydia E. Pinkham's Vegetable Compound and Liver Pills restored me to health and I want to thank you for the good they have done me. I have had quite a bit of trouble and worry but it does not affect my youthful looks. My friends say 'Why do you look so young and well?' I owe it all to the Lydia E. Pinkham remedies."—Mrs. Robt. Stopiel, Moore Avenue, Washington Park, Illinois.

We wish every woman who suffers from female troubles, nervousness, backache or the blues could see the letters written by women made well by Lydia E. Pinkham's Vegetable Compound.

If you have any symptom about which you would like to know write to the Lydia E. Pinkham Medicine Co., Lynn, Mass., for helpful advice given free of charge.

could never bring himself to relish the vegetables when they were prepared for the table; they seemed to choke him; and the sight of the well-remembered fruit brought tears to his eyes.

Information of the change in the plans of the old people was received by Henry's wife with unfeigned disapprobation.

Not until the old couple were well on their way home did the reason of their sudden return there dawn on the mind of their son. Then he said:

"Helena, do you care to know why your father-in-law and mother-in-law did not make a home with us, as they first intended?"

She noted the bitterness in his tone, andsaid nothing, but waited with questioning eyes for what he had to say.

"They overheard your learned disquisition on the subject of grandmothers—the danger of allowing them to nurse or caress their grandchildren."

Helena Cross blushed a fiery red. She knew her husband was right, and she would have given much to recall the words which had worked such mischief.

She was not so cruel or hard-hearted as not to realize what she had done and to regret it from the bottom of her heart. She was young and felt the importance of wife and motherhood, and had listened to too many well-meant but false and foolish teachings; and herein lies excuse enough for Henry's wife, whose punishment was quite adequate to her fault, or so her husband decided when, a few hours later, he saw her eyes red and swollen with weeping.

As for the father and mother who had so suddenly changed their mind, no tongue can tell how blest and sweet and altogether lovely the "little old tumble-down house," which had been so calmly deserted by them four days before, appeared now, as, in the golden light of an October sunset, they stopped before it.

"Oh, I'm so glad I didn't tear up or down anything," sighed Hester softly, wearily, yet delightedly, as she stepped inside the dear old kitchen door. "Jacob, are you too tired to run over to Bennett's and get the cat? They'll give her up—it don't seem quite like home without her—— Why, bless me, there she is! I might have known she'd see us coming. And now we'll unpack the things Henry made us bring, and have supper. Do get out from under foot, puss, till I get a fire built."

And Jacob, splitting pine kindling, kept his face turned aside from Hester that she might not see the happy tears in his eyes.

No one to welcome them, only the old cat they had deserted; yet for Hester and Jacob Cross it was a blessed homecoming.

Letters came at regular intervals from Henry during the winter, and each one was filled with news of the little child—all her little ways and wiles—bitter-sweet news to Grandma Hester. But through all ran an interlude of sadness; baby was not strong. She had illness after illness, and only partially recovered from each one.

By and by there came a missive that filled the two old hearts with mixed emotion. Baby was coming—baby and baby's mother! The letter, sweetly worded, was written by Helena.

"Will you kindly let us come, father and mother," it said, "and help me nurse the baby back to health? I am sure that in the sweet, pure old home that Henry is always telling me about she will grow strong, especially with a grandma to love and pet her."

Hester was struck dumb with joy and amazement. She was in the midst of her spring housecleaning, and in order to be ready to receive them on the date mentioned some extra effort and haste would be necessary. This was a small difficulty, however, as in addition to the strong woman already in the house, there were others to be had, and the "little old tumble-down house," in reality a low and old-fashioned but roomy and pretty cottage—pretty because of its setting of vines and flowers and thrifty fruit trees—was soon as thoroughly purified as could be, and shinig fnrom top to bottom.

And it came to pass that one day Helena Cross, weary, but pleased and hopeful, alighted from the old stage, and at the gate of her husband's old home met his mother and gladly surrendered into her arms the pale, precious baby, which grandma had never expected to see again till it had grown into a cold, stately woman like Helena had been before the deadly fear of losing her child had changed and softened her.

Grandma's constant care and country air soon accomplished the desired result, or well began it, so that when the autumn frosts began to ripen the nuts the fiat came forth from the busy husband and father in the distant city that baby and her mamma must come home, and with them the father and mother.

But after much thought and careful consideration the old folks decided that they were better off in their own homely old home, and that if they could have their beloved daughter-in-law and her child with them during each summer, the winters would pass by swiftly, mere seasons of joyful anticipation.

HOMESEEKERS' EXCURSIONS VIA C. G. RAILWAYS

TO MANITOBA AND THE CANADIAN NORTHWEST—CHOICE OF ROUTES — THE CLAY BELT COUNTRY.

Second class excursion return tickets will be sold every Wednesday until October 25th, to Winnipeg, Regina, Saskatoon, Calgary, Edmonton, and numerous other points in the Canadian Northwest. These tickets will be good for return within two months from date of issue. Full particulars can be obtained from any ticket agent of the Canadian Government railways.

Holders of these tickets have the choice of different routes. They can travel via Quebec and Canadian Government Railways to Winnipeg—the route of the Western National Express, or by the new "Transcontinental Line" via Toronto, North Bay, Cochrane, Ontario, and Canadian Government Railways to Winnipeg.

Homeseekers' tickets reading via Quebec will be good for stop-over at Doucet, Que., Hearst, Ont., and intermediate Canadian Government Railways stations, while tickets routed via Transcontinental Line will permit stop-over at Cochrane, Ont., Hearst, Ont., and intermediate stations, with the additional privilege of purchasing side trip tickets if desired at Cochrane for points on Canadian Government Railways east of Cochrane for points including Doucet, Que., at special low fare.

The above arrangements will permit passengers to inspect splendid new farming country in Quebec and the famous "Clay Belt" of new Ontario—a rich farming territory opened up by the new line of the Canadian Government Railways.

THE CURE OF THE SPOILED CHILD

In part of what I am about to say I may seem to be playing too frequ..tthou 88. . .0z7.2p| fwyp cmwfyp cm ly upon one or two strings. But though this may appear to be monotonous it is a monotony that cannot with safety be avoided. The physician, called in to attend a sudden illness of your child, will take the child's temperature, examine his pulse, inquire what he has eaten; and some such preliminary routine he will follow in every new case he is called in to treat however different may be the diseases. The same liberty of repetition I must also claim. The way to begin to cure a child of faults that may interfere with his best development is first to examine ourselves to learn if we have any character disease which may be a constant source of new infection to the child; and that if we have our cure must start with the cure of ourselves. Just so, if we would cure our spoiled child, we must begin by looking into ourselves; the spoiled child usually means a parent who spoiled him. If our child is spoiled, what is there in us that did it?

There may have been any number of things. Perhaps the greatset cause behind the spoiled child is the mother's unthinking indulgence during the earliest years of the child's growth, when his habits are forming. The mother may be unwilling, or may shirk, to meet directly and frankly the disagreeable situations which arise.

Rather than have an open conflict with her child, making clear to him once and for all what is expected of him, and what he can expect from others, the mother too often yields to the child's caprices, or satisfies his selfish, unreasonable demands. Thus each successful overawing of his mother strengthens the child's capricious selfishness. Or perhaps the child may have been sickly for a long period, and the mother may have felt that he could not be crossed, and may have arranged the life of the entire family so that it revolved around the child's life—and the child may have become aware that he was a little sovereign.

In such cases the cure must be started by the mother's realization of the injury her policy is doing her child. How one mother was brought to see the seriousness of such a situation as this, and how she handled it, may serve to suggest to other mothers how the tragedy of the spoiled child may be avoided. This mother had a son of eight, naturally bright and kind, but who unfortunately from birth had suffered from attacks of asthma; also she had a son of twelve, strong, generous, energetic, and with a keen sense of justice. Because of his misfortune the younger brother, Sam, was given the best of physical care, and was shielded by every precaution against overstimulation. Further, he was allowed to grow up with the understanding that his older brother, David, should yield to him upon all points—should, in fact, be almost his personal servant. Naturally he made demands on David which were unjust and unreasonable. If David would not at once obey, which sometimes he did not, Sam would instantly begin to cry, which invariably brought the mother to the scene. Fearing dreadful consequences from his irritation, she would put all the blame on David. Frequently, without question, she promptly punished the older boy for bringing on such situations.

For a period David received rebuke and punishment as a matter of fact. He was subdued by fear into believing in the dreaded consequences that might result from his brother's illness. But oe day when Sam's crying caused the mother to chastise David for some trivial offence that Sam weepingly announced, and the mother told David that as further punishment he could not play baseball that afternoon—baseball being his greatest pleasure—David stood for a moment as if dazed by what had happened to him. Then, as if moved by some force outside himself, he flung himself upon his little brother and pommeled him with all his boyish strength.

A scene followed between the mother and David which need not be described here; but David finally managed to express the injustice of the whole situation. Then he declared that he would not stand his mother's treatment or his brother's tyranny another day—he would run away from home. The mother, in an awakened agony for David, for the first time began to see what was happening—that little Sam was being made into a selfish prig, and that, as serious as was his physical trouble, even more serious would it be for him to grow up a spiritual cripple.

The mother decided then and there that, despite Sam's physical condition, he was never again to have his way if his way was unjust and unreasonable. She told him that from that day on, unless he could play justly and fairly, unless he could give as well as take in his play, he could not play with his brother; and, since his physical condition did not permit him to play freely at large, he would have to play all by himself in a single room at home. This program was strictly

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Heart Palpitated

Would Have to Sit Up in Bed.

FELT AS IF SMOTHERING.

Mrs. Francis Madore, Alma, P.E.I., writes: "My heart was in such a bad condition I could not stand any excitement, and at times when I would be talking my heart would palpitate so that I would feel like falling. At night, when I would go to bed and be lying down for a while, I would have to sit up for ten or fifteen minutes, as I would feel as though I was smothering. I read in the daily paper of a lady who had been in the same condition as I was, and was cured by using Milburn's Heart and Nerve Pills, so I bought a box, and they did me so much good, my husband got another, and before I had used half of the second box I was completely cured. I feel as though I can never say enough in favor of your Heart and Nerve Pills."

Milburn's Heart and Nerve Pills are composed of the very best heart and nerve tonics and stimulants known to medical science, and are for sale at all dealers, or will be mailed direct by The T. Milburn Co., Limited, Toronto, Ont.

Price, 50 cents per box, or 3 boxes for $1.25

adhered to. The first time the mother discovered that Sam was unfair and selfish in his play she took him right out of the game and put him in a room entirely by himself. Sam was astonished at this change in his mother's attitude, and protested violently. The mother, though fearful of results, let him protest without changing her decision, and soon Sam learned that his mother was in earnest. Several such unpleasant experiences absolutely cured Sam of his habit of unreasonable demands, and also made life happier for all concerned.

The problem presented by one of my correspondents, of the child who "cries violently until he gets what he wants," is a very common one. The child who has this habit is almost invariably a child who has learned from experience that crying hard, and crying long enough, is the most successful method for securing his ends. Sometimes this practice originates from what some parents claim are absolutely unavoidable—one instance being a sickly child, such as I have just cited—which, the parents consider, require that the child be not irritated, crossed, or annoyed in any way. A child so treated quickly and aturally learns the great value to himself of showing irritation. This coddling in childhood usually develops a selfish, self-centered, self-seeking adult, who in the end pays a heavy penalty for it all by being generally disliked.

This use of the cry as a business method of the child is a comparatively simple variety of "spoiledness" to cure, if the mother goes at the affair whole-heartedly and does not allow herself to weaken and yield in the end. When the child wants a certain thing and begins to cry for it, if what he desires is just and right for him to have, under no circumstances should the thing be given him while he continues his fit of crying. The mother should say simply and firmly to the child: "Of course, Willie, you may have it just as soon as you stop crying." When the child meets the condition the promise must be kept.

On the other hand, if a child is crying for something that is wrong for him to have, or wrong for him to have at that particular time, the mother should, with equal frankness and firmness, tell the child that he cannot have it. If the child is old enough to understand reasons, give him the reasons; if not, make a clear, simple, brief, and direct statement, and let it go at that. The mother should go about her affairs, practically paying no more attention to the child. leaving him to cry it out. Crying will not hurt him. Except when frightened or physically injured, a child cries solely to attract attention. When he perceives that his crying is getting him no attention he wearies of the performance. After a few such experiences the child will learn that his mother means what she says, and that his crying will bring no results, and he will shortly give up this unpleasant practice.

A chief point to remember in this connection is that you must prove to your child, in your every-day relationship with him, that what is reasonable and right for him to have he shall have, and that what is wrong or harmful for him to have he cannot have under any circumstances. You must strive to establish in the child a perfect confidence in your sense of justice. And this confidence you can hope to secure only by first giving adequate thought as to what really are the child's rights.

The type of "spoiled child" who is destructive, who delights in teasing animals, or engaging in malicious mischief, is generally a child whose mental, ervous, or physical energy has not been constructively utilized or directed. Therefore his energy escapes in malicious and destructive activities. Back of all his "spoiledness" there may be only, or chiefly, a suppressed desire. The cure is obvious—an interesting and constructive outlet for his natural energy.

"Joe is impossible to have around the house; he is so incorrigibly mischievous!" a mother complained to me. "He simply takes the house apart. He meddles with every clock, lock, or screw, and we never know what awful thing is going to happen next." To illustrate, she told me of an unpleasant experience the family had had on account of Joe's wicked mischievousness in the early fall, when the steam had first been turned on. It seemed to them for a while as if the whole house was going to be blown up, for steam was escaping everywhere. Joe calmly came forward and announced that he knew what was the matter; that he had unscrewed certain valves to see what would happen, and that he knew how to fix those valves. This, to the mother's great surprise, he did. "And," concluded the mother, "I fixed Joe, to help him remember not to meddle again with the valves!"

It was very plain that what this "spoiled child" needed was not punishment or suppression of his mechanical inclinations, but a chance to make use of them. I advised the mother to have Joe join a mechanical class in a boys' club house in the neighborhood. I knew that in connection with that class the boys also had gymnastic instruction under a competent leader. This proved to be exactly what Joe needed. He found great pleasure in his new class room; he learned the use of certain mechanical devices there; and before very long Joe, instead of being an annoyance to everybody, became a very genuine source of pride to the household. He had a corner in the house which he called his "shop," whence emanated all kinds of original and ingenious mechanical toys.

The child who maliciously teases animals does it perhaps out of idleness, or because he has never been trained or taught to treat animals kindly, or because he has seen those about him careless and unkind to animals. Little children are cruel without meaning to be cruel or knowing that they are cruel. Kindness and sympathy for animals can best be developed in children through actual personal experiences. Every little child should have a chance, and should be required to care for some living, growing thing, animal or plant. Only through such practices can the finer human sympathies and instincts in the child be awakened and developed.—Miriam Finn Scott, in Good Housekeeping.

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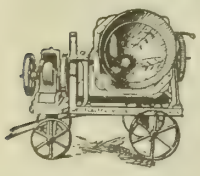

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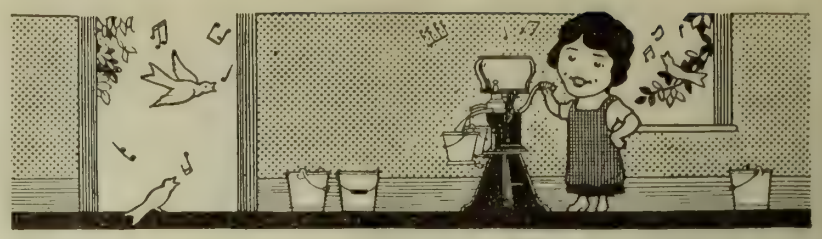

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CONSTIPATION: THE ROOT OF MANY ILLS

Constipation is not a disease. Rather it is a condition of the system in which the bowel movements occur at irregular intervals, to the detriment of the body. Constipation has no specific cause. It does not result from any one body condition. Constipation therefore differs from a disease in that it may result from a multitude of things. Not infrequently it is due to some trifling derangement of the body functions. Again it may result from a serious organic disease. In some instances it is merely a bad habit.

It would be impossible to enumerate the many things which predispose to this condition. Nor is the cause in any particular case always constant. It may be due to one thing this week and to an entirely different one next week. Without apparent reason the bowel may become active. And with no obvious cause it may again become costive. Almost everything that affects the body may have an influence over the intestinal tract. Work, worry, nervous excitement, recreation, food, irregular habits of stool—in fact, everything that goes to make our daily life has an effect upon the bowel. Probably the most common cause of constipation is lazy, indifferent habits fathered by an ignorance of the necessity of keeping the gastro-intestinal tract active.

The character of food is an important factor. Concentrated foods, such as meats, sweets, pastry, and desserts, predispose to costiveness, while vegetables and foods with hulls and coarse fiber, with relatively large indigestible residue, tend to laxity of movement. Frequently costiveness results from the absence of sufficient fluids in the bowel.

But each person is a law unto himself. Each case requires a personal study to effect a cure, except when due to the most simple cause.

Since it is a body condition rather than a specific disease, it is evident that there can be no specific treatment.

Medicines will not cure constipation. But medicines will cause the bowels to move. So also will diet, massage, gymnastic exercise, suppositories, injections, etc., accomplish the same result.

But keeping the bowels active and curing the trouble are not synonymous. A remedy may give perfect relief daily, but fail utterly to effect a cure. And since the medicines may not cure this evil it is necessary that the remedy be repeated each day. Habit is an important factor in training the bowel to move at a certain hour of the day. But you must keep the appointment most promptly.

Necessity of keeping the bowel active is not fully appreciated. Few, indeed, regard such a matter as a means to health. Nor do people consider constipation as a potent factor in producing disease and sickness. To supply the body with food is no more important than keeping it free from waste materials. Nothing will lower the efficiency so much as holding within the bowel the waste products to be absorbed into the system.

Aside from these easily recognized results, there may occur many microscopic changes in the structural tissues. The condition known as rheumatism may be entirely due to—or at least it is intensified by—constipation. So also is high blood pressure, hardening of the arteries, liver and kidney disease, all kinds of headaches, coated tongue, a bad taste, and frequent bilious attacks. In fact, nothing will play havoc with one's health so quickly as habitual constipation.

With the conversion of the food into nourishment there is a breaking up of the structures of the food into soluble and insoluble materials. The digestible portion, which is the soluble part, goes to sustain the body. The undigestible residue, or the insoluble portion, constitutes the bulk of the dejecta. It is a fact well established that the bowel movement is stimulated by the bulk of the bowel content. So that if the foods are of

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sufficient bulkly nature there is less likelihood of constipation.

To overcome this bad habit one should practice wholesome living. Time and patience are necessary to correct this trouble. If life is worth while it is worth living right, and to live right one must avoid all kinds of excesses. Have sufficient recreation, and especially abundance of outdoor physical exercise. Cultivate a taste for foods suited to your body needs, whatever they may be. But there is no need for you to become a crank about the matter if you use good common sense. Drink abundance of water, and, above all things else, have a fixed time for going to stool.

If you are constipated in spite of all of the health measures which you may adopt, it will be necessary to take medicines. It is very much better to secure a daily movement by the use of drugs than to allow the body organs to be destroyed by poisons from the bowels. The simple laxatives are not objectionable. They have no ill effect upon the body. But they become a nuisance and should not be required if we are living correctly. However, it is very much better to take them than to allow the bowels to go unmoved.

Bear in mind this one thing: that if your bowels are not active, it is because you have not been living right. If your daily habits of work, rest, recreation, eating, and drinking are such as make for right living and good health, your body functions will be more normal, and you will rarely require laxative medicines.—Julian Clarke, M.D.

CABBAGE ROOT MAGGOT AND ITS CONTROL IN CANADA

(Continued from page 669)

plant and just under the surface of the soil. In one instance 7 eggs were found about one-eighth of an inch below the surface, close to the stem. Others were found attached to the stem and in the soil close to the stem. The eggs were most commonly found in 1915 in groups of three and four. In some years oviposition in Ontario takes place earlier than the date above metioned. We have on record of eggs having been deposited in the beginning of the third week of May. The actual time of the beginning of egg deposition will cary, of course, according to climatic conditions.

Preoviposition Period

As mentioned previously, the preoviposition period is an important one, as upon it depends of the value of sprays of poisoned baits to kill the female flies before they have laid their eggs. Sanders recorded the oviposition period of the Imported Onion Maggot Fly as varying from 10 to 14 days.

Hibernation

The usual stage in which this insect passes the winter in Canada is apparently the puparium stage. The finding of living larvae in December at Ottawa, Ont., however, after winter had set in indicates that the insect also hibernates in the larval form. In the United States, according to some authors, it is stated that the winter is passed in the adult stage; but so far as Canada is concerned we have no records of the flies wintering over alive.

The Charlottetown Exhibition will be held on the 26th to the 29th of September.

ENGLISH APPLE MARKET DURING 1915-16

(Continued from page 668)

inspection must necessarily be made at long range, and is only regarded as a supplementary to the more detailed inspection at the quay. Quite frequently, however, some twenty or thirty apples are thrown to buyers who wish to examine them more closely, and if there is any doubt as to the condition of the fruit the whole barrel is emptied out and exposed to view in large baskets provided for the purpose. After this demonstraction of value the bidding begins, and the lots, usually 20's or 30's, are knocked down to the highest bidder.

Each of the six members of the Liverpool Fruit Brokers' Association, Ltd., takes his place on the rostrum for a definite period, and offers the fruit that has been placed in his hands to the same buyers. At the end of this period he must give way to his successor, and, if he still has anything to offer, wait till his turn comes round again. The rotation is arranged to that the first turn is given to a different broker each day.

The buyer has the right of rejecting for cause within forty-eight hours of purchase. If he has bought tights and is offered slacks at the quay, or if the sample shown at the sale was very manifestly superior to the apples delivered, rejection is in order. As a matter of fact, rejection for any other reason than misclassification is rare. Rejected apples are recatalogued and resold at a subsequent sale. Occasionally, instead of accepting a rejection, the broker may arrange a compromise on the price offered at the sale. As this would encourage haggling, it is seldom done.

In Liverpool auction sales are held regularly every Monday, Wednesday and Friday throughout the season, and the sales are usually largely attended and marked by active competition.

In Manchester the sales are held regularly every Tuesday and Thursday throughout the season. All the arrangements are quite similar to those in effect in Liverpool. This auction is also a closed one, and is attended by many of the buyers who attend the Liverpool sale.

In Glasgow there are two auction sale rooms, and sales are held with fair regularity twice a week throughout the season, usually on Wednesdays and Fridays. The Glasgow sales are not closed, but open to all who care to attend, retailers as well as wholesalers. Even the street hawkers or barrow women take part in them, though the fact that most of the apples are sold in lots of 20 or 30, or more, naturally restricts the operations of the smaller dealers, who buy principally samples or broken or rejected lots and the small parcels occasionally offered. As in Liverpool, the apples are classified on the quay by brokers' employees. Here also the larger buyers arrange to have a report upon the condition and quality of each lot before entering the sales room, but the practice is not so general as in Liverpool. Samples are also displayed at the auction as each lot is offered. The same rules are also effective as to rejections, and there is similar co-operation among the brokers to sell in turn to the same roomful of buyers.

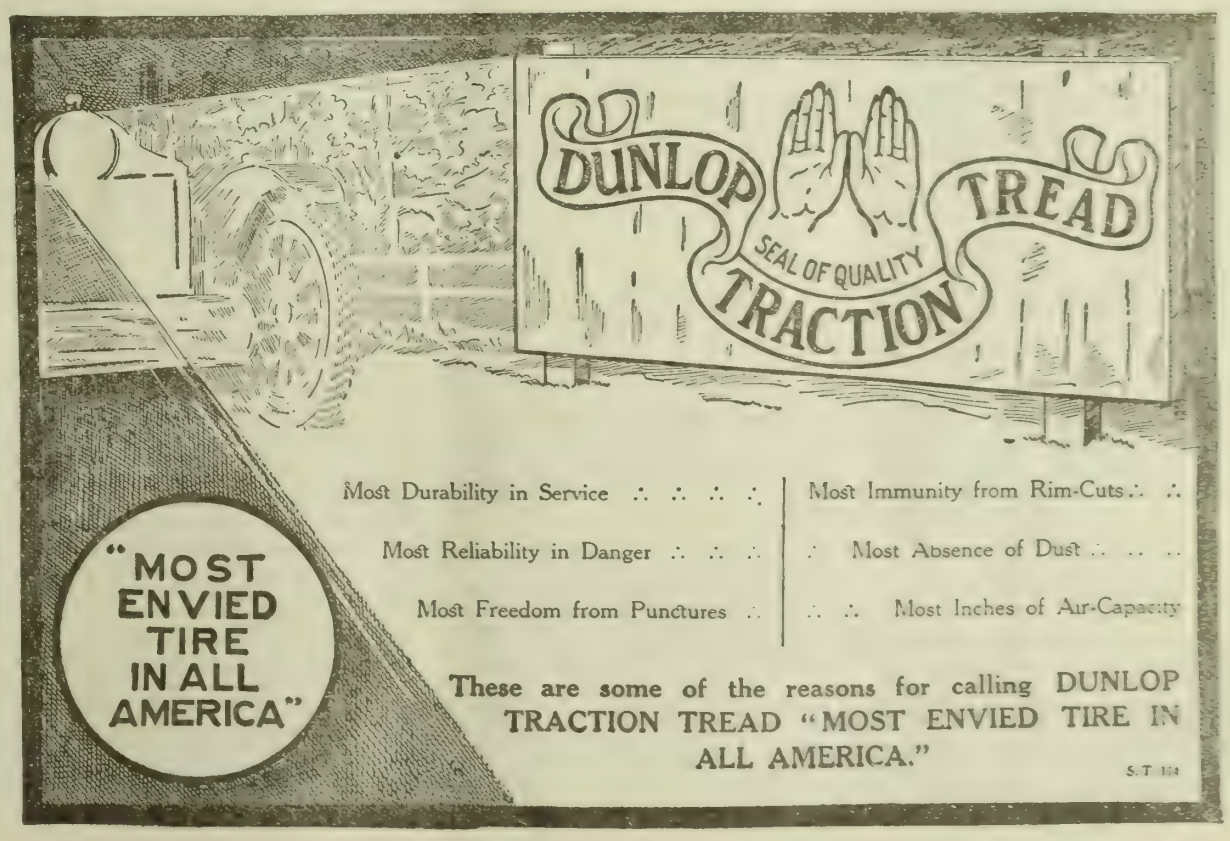
In London the auction sales arrangements are by no means as good as at the other centres. The brokers do much of the selling by private treaty; the auction sales are held irregularly, and the most important difference is that there is no co-operation of the brokers, with sales from a single rostrum. Each broker holds forth at his own stand, and several sales may be going on at the same time, with the buyers divided among them all. There is a similar lack of system in the methods of classifying the apples, the catalogues in some cases not giving even the marks, which are considered of such importance at other auction centres as indications of value. The buyers simply base their bidding on the samples displayed at the auctions. The sales are open and may be attended by any one.

The Problem of Tights and Slacks

Canadian shippers are much interested in the system of classifying barrels of apples for auction sales purposes, and there seems to be a very general feeling among them that they scarcely receive justice in this connection. A shipper who believes, as most do, that his apples were properly packed when they were shipped is surprised, on receiving his returns, to find a varying proportion reported as slacks and the sales prices reduced on this account.

It should be clearly realized that although the percentage of slacks among reliable and experienced packers is comparatively small, there are many factors that tend to the production of slacks besides the actual packing. In a trans-atlantic voyage there is bound to be a certain amount of shrinkage, depending upon temperature, upon the degree of maturity which the apples have reached, upon their freedom from bruising or disease, and upon the variety. A delay in forwarding apples, which keeps them for ten days or so standing in a warehouse, rough handling when loading or discharging, further delays at their destination due to dock congestion or dock labor shortage, etc., are all factors which tend to produce slack packs, and some of these are such that the best packers cannot provide against them. As a matter of fact, the feeling against slacks among buyers on the market, and the comparatively low prices they fetch at the auctions, are due to the presumption, verified frequently by experience, that the slack or shaky condition of the barrel is an evidence of wastage or softening of the apples on account of bruising, over-ripeness, or some other serious defect. If the buyer can be assured that the apples are sound, and that there is merely a slight defect in the packing, he will often bid within a very small amount of a tight price. At the same time, it is the general feeling among the trade that it is not safe to buy slacks for reshipment on account of the deterioration due to handling in transit. Country buyers, therefore, as a rule do ot bid on slacks, which are usually purchased by wholesalers at the primary receiving centres.

The buyers at Liverpool are very much stronger and better organized than at any other auction, and they have accordingly insisted on a very strict classification of apple barrels. In Glasgow, where the buyers are not so well organized, apples are classified as tights, ticks, slight shakes, slacks, and wets. Apples are tested in the first place by tapping on the barrel head. If no hollow sound is heard the barrel is classified as tight. If a hollow sound is produced, the barrel is shaken. A slight murmur of movement causes a classification as tick, a greater movement shows a slight shake, and a distinct rattle a slack. The term wet describes itself. Although the tapping of the barrel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head is used as the preliminary test in Glasgow, no barrel is placed in any other than the tight class on the strength of a mere tap. This first evidence must always be corroborated by shaking. In Liverpool, on the other hand, slack-tapping is the final test. Barrels are, indeed, frequently shaken, but the fact that no shake sound can be produced does not prevent a hollow-sounding barrel from being considered a slack. There seems to be no justification for this practice. In Liverpool, moreover, there is no such definite classification into ticks, slight shakes, shakes, and slacks as exist in Glasgow. Everything that is not tight or wet (i.e. the three Glasgow classes besides the Liverpool tap-slack that Glasgow would call tight) is put in a single category as slack. It is difficult to justify this system as fair to the individual shipper. There is something to be said, however, for the brokers' defence They point out that the more minute classification would be much more difficult to carry out with accuracy, with the result that the percentage of rejections would be greatly increased. They also claim that the catalogue classification affects the bidding very slightly, as few buyers take part in a sale without a special report from their own men as to the condition and quality of the several lots. Thus the buyers are well informed as to whether the particular slack being auctioned is merely a tap slack, a tick, a shake, a slight shake, or a slack, and this information has its effect on their bidding.

Canadian Cargo Inspections

Canadian apple shippers owe a great deal to the thorough, painstaking work of the Canadian cargo inspectors at London, Liverpool, Manchester, Glasgow, and Bristol. These officials are on hand at the discharge of every apple boat, and make it their business to see that there is no undue rough handling in unloading the barrels. Their influence is a very real and definite one and has been especially valuable during the past season, when labor shortage has resulted in the employment of a constant succession of new and inexperienced men at the docks In many instances the action of the inspectiors has been effective in securing a change for the better in the methods of handling the apples. The value of these services will be realized when the important part that rough handling plays in the production of slack barrels is considered.

Special Difficulties and Handicaps

During the past season shoppers have had to contend with a great many difficulties and handicaps due to the present abnormal war conditions. These have included restricted shipping space, very high freight rates, dock congestion, and dock labor shortage, with consequent delays in discharging, increased rates for cartage, increased handling charges, difficulty in obtaining railway trucks for reshipment to inland centres, etc. In some cases apple boats have been in port eight to ten days before they could be unloaded, and apples have been kept for long periods on the quay, delivery being impossible on account of shortage of facilities. In Liverpool dock congestion difficulties finally culminated in a strike of the laborers, which fortunately did not last very long.

Proposed Embargo on Fruit Importation

The trade was very much alarmed late in January at the announcement of the president of the Board of Trade that the government was contemplating taking measures to prohibit the importation of some fruits in order to release shipping tonnage for the conveyance of commodities considered of more value to the community. The Canadian High Commissioner, the Agents-General of all the Canadian fruit producing provinces, and the Fruit Trade Commissioner all made representations to the government pointing out the very serious effect the proposed embargo would have upon the important apple industry of Canada. The Australian government and a deputation from the wholesale fruit trade also took a strong stand against the proposed fruit restrictions. As a result of these representations, it was announced that the importation of fruit from the colonies would not be prohibited.

The Transportation Problem Next Year

Although one menace to the apple industry is thus satisfactorily disposed of, it is clear that great difficulty will be found in securing sufficient shipping space next year for apple transportation. During the past season this difficulty was sufficiently serious, but it seems likely that next year a tonnage diminished by war requirements and by submarine activities will have to take care of a much larger offered output. Shippers will therefore be well advised to give their earnest and early attention to finding some solution for this problem.

Apple Statistics

The total apple arrivals at the principal ports of the United States and Canada during the season of 1915-16 were as follows: Liverpool and Manchester, 652,944 bbls; London, 383,938 bbls; Glasgow, 330,975 bbls; total, 1,367,857 bbls. Of these totals the following quantities came from Canada: Liverpool and Manchester, 179,534 bbls; London, 222,886 bbls; Glasgow, 89,006 bbls; total, 491,426 bbls. Canadian apples therefore formed nearly 36 per cent of the total arrivals from America. For purposes of comparison, all box arrivals have been included in the above figures, reckoning 3 boxes to a barrel.

The following tables give the Canadian apple arrivals in greater detail:

From Ontario

	Barrels
Liverpool and Manchester	54,538
London	1,794
Glasgow	69,987
Total barrels	126,319

	Boxes
Liverpool and Manchester	6,631
London	2,657
Glasgow	10,586
Total boxes	19,874

From Nova Scotia

	Barrels
Liverpool and Manchester	121,575
London	218,290
Glasgow	14,358
Total barrels	354,223

	Half Barrels
London	320

	Boxes
Liverpool and Manchester	1,846
London	1,888
Total boxes	3,734

From British Columbia

	Boxes
Liverpool and Manchester	1,786
London	3,380
Glasgow	3,395
Total boxes	8,561

The figures of apple arrivals (in bbls) from Canada and America during the past three years are given for purposes of comparison:

Year 1915-16

Liverpool	527,547
London	383,928
Glasgow	330,975
Manchester	125,397
Total	1,367,857

Year 1914-15

Liverpool	1,050,359
London	646,957
Glasgow	522,158
Manchester	211,351
Total	2,430,825

Year 1913-14

Liverpool	642,695
London	426,884
Glasgow	362,435
Manchester	88,934
Total	1,520,948

GRAND CREAMERY PICNIC AT MARGAREE

Tuesday, July 11th, was a busy day in the Margaree Valley. The demonstration creamery erected by the Nova Scotia Department of Agriculture during the summer of 1915 and opened for business this spring, was the medium for the gathering of the people from all parts of the Valley and many from other parts of Cape Breton Island, to meet together in one grand picnic, the last of a series held in connection with creameries in the province.

The day proved fine, and this beautiful valley was looking its prettiest with all the different shades of green on the hillsides newly washed by the recent rains, and the hay and crops in the valleys below looking their very best. In the early hours of the morning the crowds began to assemble, and by noon it was estimated that there were fully 1,500 people on the picnic grounds adjoining the creamery. All enjoyed a visit of inspection through the new plant, where they met the creamery manager, Mr. Sweeney, and his assistants, and were shown the different processes through which the product passed in being manufactured into the large piles of delicious yellow butter. A tasty lunch prepared by the ladies of the Margaree Valley was served on the grounds, after which all interested adjourned to the western end of the field, where a meeting was called to order by Rev. Dr. MacDonald, and addresses of a practical nature, touching on all the phases of the dairy industry were delivered by W. A. MacKay, George H. Barr, Chief of the Dairy Division, Ottawa; Prof. Trueman, Harvey Mitchell, and Prof Cumming. Premier Murray, who was in specially good form, delivered the closing address of the afternoon, speaking enthusiastically of the possibilities and adaptability of the Margaree Valley for the development of dairying, pointing out to the people the splendid opportunity that was opened up to them through the medium of this creamery, and expressing the hope that the development would be in proportion to that which was warranted by the possibilities. This part of the program closed with a vote of thanks to the speakers and three cheers for Premier Murray.

The balance of the day was spent in different forms of amusement. Dancing was carried on to the skirl of the pipes and the strains of the violin. In the evening all went home feeling that they had not only spent a pleasant day but a profitable one as well, and convinced that this new form of picnic was very much in advance of picnics which were given over entirely to pleasure-seeking purposes, and all had the conviction that agriculture had received an impetus that would eventually bring the Margaree Valley to the forefront of agricultural communities in Nova Scotia.

YOUR HORSES' TEETH

George Klein, a veteran breeder and importer of draught horses of years gone by, used to say that many a farmer was wasting large quantities of grain because he did not have his horses' teeth looked after periodically. Just recently a farmer gave us the following experience in confirmation of this: One of his horses, ordinarily an easy keeper, began to go down in flesh despite heavier feeding. She did not appear well, and did not shed her coat as usual in the spring. Later in the summer he took her to a veterinarian, and when her mouth was opened it was found her teeth had grown out sharp and one cheek was raw and badly inflamed. The wonder was that she could eat at all. The teeth were put into good condition, and two weeks later she had gained in weight, had commenced to shed her coat, and her general condition had improved. Instances of this kind could be multiplied many times. If you have no already done so, try a little teeth insurance on your horses and note results.

Supplying range food for chicks will make it possible to realize more poultry profits and keep the young stock in a healthier condition. Where the chicks cannot run on a range, provide sprouted oats. For temporary feeding one can soak oats over night and spread them in thin layers on trays where it is light and warm. In four or five days the oats will be ready for feeding. Rape may be grown easily in the chicken lot where the chicks can snip it; or it may be cut and fed in their pens. Cabbage, lettuce, mangels, beets and turnips can also be used for green food. A frame made of one-inch mesh wire netting, placed over growing plots, will allow chicks to snip green food without scratching seed.

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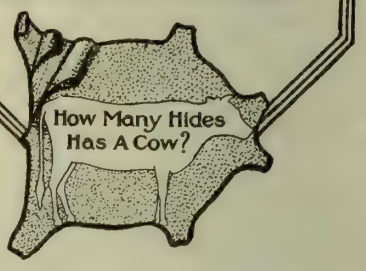

DECLARE WAR ON WEEDS NOW

The five weeds occurring most frequently on the 400 farms visited by the Conservation Commission in 1915 were Canada thistle, couch grass, wild mustard, ragweed, and sow thistle. One hundred farms were visited in each of four counties, viz., Dundas, Carleton, Waterloo, and Northumberland. In many instances the weeds were very bad and increasing at an alarming rate. In Dundas 98 per cent of the farmers visited reported wild mustard; 88 per cent reported sow thistle, with 26 per cent showing it increasing. In Carleton 89 per cent reported couch grass; 77 per cent reported sow thistle, with 22 per cent reporting it increasing. Conditions wesre as bad in the other counties, but these examples serve to show the real seriousness of the problem and the need for concerted effort to deal with it.

To succeed in eradicating weeds one must have a knowledge of two important points: how long the plant lives, and how it reproduces and spreads. Regarding duration of life there are three classes of plants: Annuals, biennials, perennials.

Annuals come up from seed, bear flowers and seeds, and die, all within one year. Biennials grow from seed and produce only leaves during the first year. The roots and sometimes the leaves live through the winter. The second year a flower stalk comes up, and seeds are produced, and the plant dies. Perennials are those whose roots ordinarily live on year after year. The plant may or may not produce seed every year, according to conditions.

Practically all annuals reproduce by seeds only. Biennials also, except during the winter, when the roots are in the ground, reproduce by seed. Perennials propagate by means of the roots, or by roots and seed.

Means of Control

Annuals and Biennials:

1. Cutting or pulling.
2. Thorough tillage of cultivated crops.
3. Rotation of crops.
4. Spraying with chemicals.

Perennials:

1. Summer fallowing.
2. Partial summer fallowing and smother cropping.
3. Thorough cultivation with crop.
4. Smothering with tar paper, etc.
5. Application of salt brine, gasoline, etc.

Farmers, townspeople, and municipal authorities alike should put forth every effort to control the weeds before they get the upper hand. Enlist today, and join whole-heartedly in the fight against our common enemy, the foul weed.—F. C. N.

COLIC IN HORSES

Colic is almost always found among farm horses, and, like many other diseased conditions that are commonly met with, many people have come to regard it is unavoidable. An odd case of colic may possibly be unavoidable, but there can be no hesitation in saying that where colic is frequently on a farm it is due to avoidable causes. Some men never have their horses affected with colic, while others never seem to be without it. To such men we would say: "Don't waste time and money looking for the best colic drench on the market, but sail right in to discover what is the cause of the colic, and when found remove it." Understand that good management will chase it off the place and keep it off. When farm horses were only worth $60 and $75 the loss of one may not have been a very serious matter, but when good draughts now bring $250 to $300 no man can regard their loss with equanimity.

A veterinarian when called in to a case of colic will always make inquiries as to the treatment of the animal for the last day or two prior to the attack. He will go carefully into the work performed, asking for particulars as to weight of load drawn, number of hours worked, what feed was given, and the intervals between feeds, when the horse was watered, etc. This is not idle curiosity on his part, but simply a desire to know what caused the attack in order that he may deal with the condition without loss of time. He could treat the case without this information, but a knowledge of the cause affords him great help. We want to draw attention to this because if a knowledge of the cause is of use to the veterinarian in treating colic it should be useful to the farmer, as it would enable him to prevent the complaint altogether. Let us examine some of the common causes of colic. First comes unsuitable food. It is a fact that a horse will digest and thrive on almost any food that is digestible; but it is also a fact—too little known—that a horse is only capable of digesting any variety of food when he becomes accustomed to it. The reason of this is that each variety of food causes the formation of a particular kind of digestive juice capable of dealing with it, and that the horse will only produce this digestive fluid as he becomes accustomed to the food. In spite of this knowledge, one continually comes across men advocating a change of food for horses, thereby laying up no end of trouble for themselves. Provided the food is of good quality, the less change the better. If a horse has been accustomed to oats, a sudden change to maize and bran would result in indigestion, an irritable condition of the bowels shown by diarrhoea, and all the foundations for a serious attack of colic are laid. It may as well be here stated that it is not often that colic is due to a single cause; it is generally a variety of circumstances. For example, a horse gets unaccustomed food, which causes indigestion; on top of that he does a long and exhausting day's work, which has the effect of still further lowering his powers of digestion; and when after the day's work he receives still more of the unaccustomed food, the chain of circumstances is complete, and he gets colic. A firm of carters werer continually losing horses from colic, and were not able to account for it. On going into the matter for them everything was found correct bar the following very important part: The horses were fed on a big feed before going to work, and were not fed again until they returned to the stable. The time away, owing to the nature of the work, varied, and often exceeded 12 hours, and on return the horse received a big feed of good quality. Scarcely a night passed without one or more cases of colic.

A horse that has worked all day without food comes into the stable exhausted and ravenously hungry. He is in no state to digest a little feed, but gets a big one, which he promptly bolts without an undue amount of chewing. Result—colic. The remedy applied, and which proved effective, was simply to carry a nose bag and at every possible occasion to give the horse a little feed. By this means the horses were prevented from getting exhausted, their stomachs were never allowed to get empty, and they were not tempted to overload them by bolting large quantities of feed on returning to the stable. This is simply common sense based on the knowledge that a horse has an extremely small stomach, which consequently requires constant refilling. When grazing, a horse will feed twenty hours out of the twenty-four, and it is unreasonable to expect him to get through in about two hours what in a state of nature takes him twenty. If you attempt to make him go against nature's laws you will cause him to overload his stomach with bad results. The lessons to be learned are obvious and are: (1) Only give the horse food he is accustomed to, and if from any cause you find it necessary to change from one food to another do it gradually, starting with small quantities of the new food, and only increasing the amount given as you become convinced the animal is getting used to it. (2) When working, feed a little and often. Watering also has a great influence on colic. Probably most people know that a horse should be watered before feeding, but many do not know the reason for this, which is as follows: When a horse drinks the water does not stop in the stomach, but goes on through the small bowels to a sort of water reservoir. As a horse drinks several gallons at a time, it follows, if the stomach is full, that a large quantity of undigested food is washed out into the small intestines and may cause serious trouble. This is avoided by watering before feeding. After a hard day's work the horse wants water badly, and should certainly get it, as he can't take his feed properly till he does get it. Often the water is some distance from the stable, and instead of being driven down for a drink before feeding the horse has to wait till later, when, with a full stomach, drinking may do him harm.

START TO TRAIN THE YOUNG COLT THE DAY IT IS BORN

Begin to train the colt before it is a day old. Handle and pet every day if possible. In handling always keep a firm hold and let the colt know from the start you are the "captain" in each of your steps of training. Never let the colt know its strength in breaking away from you, because then there is trouble ahead. The lesson is not forgotten. Halter train the colt before it is a week old, using a small, strong rope halter or a leather one made colt size. Hitch the colt to something solid and let it pull all it will. In a short time it will be as quiet as a lamb, and no more pulling, and a very small cord would be sufficient after it finds it cannot get away. Handle legs and heels as if horse is not safe anywhere. Watch the solt closely when tied, as there is a possibility of its casting itself.

Pet and handle the colt from head to heels. Handle legs and feet as if

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FOR THE HOUSEWIFE

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There is a "LIGHTER-DAY" on display in our Show Room (next door above our plant), and you are at liberty to call in and ask for demonstration and information any day.

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King Street. 'Phone 55. Fredericton.

being shod. Do this before the colt gets strong enough to pull away from you while tied. As soon as the colt will feed from your hand give it some salt and sugar. Older colts are tamed and controlled by the use of a few drops of the oils of rhodim and cummin rubbed on their noses, as when inhaled it has a very soothing effect.

There is but little trouble to train colts to the harness when handled from their youth up; neither are they likely to become kickers, as they have been educated at both ends. I am quite partial to the use of the bitting harness, as the body of the colt is more pliable to the reins in driving. The colt's body has to turn with the head, and so it is more pleasant to drive with the bitting harness. Recollect the colt's lips are very tender, and do not check too short at first. When at pasture carry a dish of grain and give all, old and young, a taste. There will be no trouble then to halter a horse. Colts and the old horses will welcome your coming and be your pets for evermore.—T. D.

CONTROLLING LICE AND MITES

Lice: The ordinary hen louse, of which there are eight species, is almost universally present in poultry flocks. Their life history is comparatively simple, and spent entirely on the host, where the eggs or "nits" are laid and hatched.

1. Blue Butter.—The most convenient and one of the most effective methods of eradicating lice is by poisoning with a mercurial ointment commonly known as Blue Butter. Blue Butter may be purchased at any pharmacy and is made more efficient and easy of application when mixed with twice its bulk of vaseline. A piece about as large as a pea should be taken on the finger tip and applied to the hen just beneath the vent. Care should be taken to spread the salve around well, so that the bird cannot eat it. One application is all that is necessary, because the nits that hatch, as well as the adult lice, are killed by their first feed of Blue Butter.

2. Dusting.—Lice breathe through little holes or spiracles in the sides of their obdomen. Advantage is taken of this in killing them by choking these breathing pores with a fine dust. Such is the function of a dust bath or lice powder. Commercial lice powders may be purchased, but they are rather more expensive and less efficient than Blue Butter. In using any lice powder it should be remembered that one treatment is not sufficient. It is necessary to repeat the application in a week or so in order to catch the "nits" or eggs which hatch after the first application. The best lice powder known to the writer is made by mixing the following materials and allowing the crumbly mash which results to dry into a fine powder. It is not only effective in clogging the breathing pores, but the fumes of carbolic increase its destructive power.

Ingredients of home-mixed lice powder: One part crude carbolic acid or cresol; three parts gasoline; plaster of paris to absorb; mix into crumbly mash and let dry in sun to a fine powder.

3. Dipping.—A most effective but rather bothersome method of eradicating lice consists in submerging the fowl, head and all, for a few seconds in a water bath containing ½ per cent carbolic acid or stock-dip. This should be done early on a bright, sunny day, so as to allow sufficient time for the birds to dry off before night.

Red Mites: The Fowl Mite, commonly known as the Red Mite, because of its reddish color when filled with blood, is one of the most destructive pests with which poultry has to contend. These mites inhabit the entire house, but most especially the roosts and surrounding walls. At night they suck blood from the fowls, and in the daytime live and breed concealed on the under side of roosts and in neighboring cracks.

Clean, dry, well-ventilated houses which get plenty of sunlight are seldom badly infested. The first step in controlling the pest is to thoroughly clean the house. Remove all droppings and old nesting material and scrub off any filth. Then spray or paint the perches, walls, and nests.—William C. Monahan, Extension Instructor in Poultry, University of Maine.

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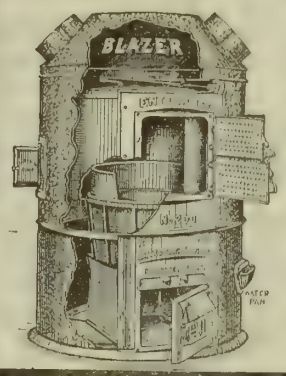

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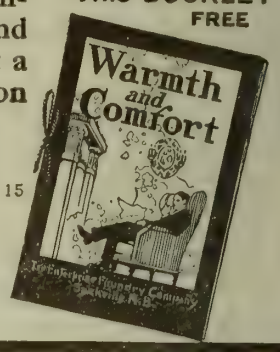

15

SANITATION IN THE HOME

Education regarding matters of health are becoming more and more widespread, and as a people we have leaped beyond the "plagues and pests" which swept out whole communities in the middle ages.

We look with horror upon the record of the fourteenth century, when twenty deadly epidemics, followed by famine, visited Europe and swept away millions of the population; but progress is slow, and even today the condition of some of our public homes for the poor, county poorhouses, and the like are being investigated because they do not come up to the twentieth century standard of cleanliness. As individuals in our homes we are often careless of the essentials of health, and we disregard many of the requirements which would make for comfort and sanitation in our community.

Our modern diseases of colds, pneumonia, disorders of children, weakness left after contagious diseases, etc., are often due to bad location and poorly cooked food, while the great white plague—tuberculosis—we know depends greatly upon sanitation, and modern investigators of health conditions are bending every nerve to wipe out this disease.

The first requisite in choosing a home is a good location. In the country we frequently see farmhouses on poor building sites where damp soil or a natural hollow in the ground makes an unwise foundation; yet on the same acreage are perfect sunny spots, perhaps on some hillside slope where the drainage would be perfect and the full benefit of God's air and sunshine be obtained.

In the up-to-date house let there be plenty of windows, for perhaps the best text of sanitation is summed up in the words "fresh air."

In choosing a house one should select a dwelling with a good dry cellar. Too often a damp foundation is the cause of many minor illnesses in the family.

But most important of all, in city or country, is the necessity of complete fumigation before entering a house whose previous tenants were unknown. This is a simple precaution, yet one frequently unheeded, and we have known of families with little children moving into a house where some one had just died of consumption without considering this necessary means of protection against the dread germ which might be lurking within that dwelling.

Where one is already established in a home, and the best must be made of prevailing conditions, there are many questions of sanitation for our consideration.

Outside the house comes the question of drainage. In the country the family well is often a source of danger to health. A little care taken in the location of the well, so that drainage from stable and outbuildings will flow away from it rather than toward it, will prevent much sickness and future misery. The proper well is fenced off so that domestic animals cannot get to it, and it has a tight cover of cement. If the water supply is pure to start with there need be no further anxiety about the water supply. Wise inspection, and the spring housecleaning should include barns and outbuildings. Their interior should be whitewashed and all refuse removed. Not only will this improve the looks of the farm, but there will be fewer flies to torment the housewife. Flies are sure to breed in stables where unsanitary conditions exist.

In providing milk, one should take all precautions both as regards the health of the cows and the cleanliness of milk conditions. Oversight on the home farm is easy in this respect, but if the milk is bought there should be the same knowledge that it comes from pure surroundings.

The question of drainage of the ground also makes a difference regarding life on the farm, for flies, mosquitoes, etc., breed in any near-by sloughs and low, wet spots with alarming rapidity. The swampy hollow should be drained or filled and the bushes cut away. This will make a great difference within a short space of time.

Inside the house the careful housewife begins at the bottom regarding home sanitation. The cellar should be her first consideration. Have the cellar carefully whitewashed once a year. Be careful that there are no rotting vegetables or plants left there forgotten when the cellar has its regular inspection and if there are unpleasant odors or escaping gas from pipes, find out the source of the difficulty without delay. If damp spots appear on the cellar bottom or on the walls, the drainage is to be suspected and care taken to have the leakage carried off in some other direction.

The old-time housekeeper kept the blinds in her front rooms down that the sun might not hurt her carpets. The sanitary housewife today prefers bare floors and rugs to carpets; or where carpets exist their coors must stand the rays of the sun, for the health of the family is of more consideration than the lasting hues of any ornament in the home. Sunshine and fresh air—let them pour in.

Strange as it may seem, every individual contributes his or her share to this question which makes for weal or woe in a community. Personal neatness, bright, sweet houses, care of the garden plots about our homes—these are all silent witnesses of our belief in the powers of cleanliness which war against unhealthy conditions, which others, seeing, may imitate.

A little care, a little thoughtfulness, plenty of fresh air and soap and water, good, well-cooked food and a cheery heart—this is the recipe for "sanitation in the home" that any housewife can learn, thus saving doctors' bills and promoting the health and happiness of the nation.

The cost of fattening and finishing cattle of good beef type is much less than fattening and finishing cattle of poor quality.

High grade sires produce high grade beef cattle, and good results cannot be obtained by the use of inferior animals.

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Fares and Conditions will be about the same as in previous years.

Definite arrangements will be announced shortly.

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Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

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James McKenny, Summerhill, Queens Co., N.B.
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C. A. Archibald, Truro, N. S.
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Hon. W. Owens, 4026 Dorchester St., Montreal.
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E. W. Heurtley, P. O. Sutherland's River, N. S.

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until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
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In picking raspberries, we number the rows, then assign two pickers in each row, and keep a chart and record at the packing shed. In a field of 40 to 60 long rows it is very difficult for pickers to find their own row after taking a carrier of fruit to the packing house unless the rows are given some distinguishing mark or number. By this plan we know just what rows are picked, and can check up the work of each picker.

Our pickers use four-quart carriers and as soon as the baskets are filled they must bring them to the nearest packing shed and have their card punched before they receive any more baskets. Pickers are not allowed to take any extra baskets with them to the field.—George D. Aiken.

RAISING POTATOES ON BRAN

An old farmer tells me that bran makes an ideal fertilizer for potatoes, bringing a good yield of clean potatoes. What about it?—J. W. R., New Hampshire, in New England Farmer.

Answer: A number of farmers use bran for this purpose. The question is answered by Prof. F. W. Taylor, of New Hampshire College: Wheat bran contains 26 per cent nitrogen, 2.9 per cent phosphoric acid, and 1.6 per cent potash. At the normal price of these fertilizing constituents a ton of bran would contain about $19 worth. At the price of them in this year's mixed fertilizers a ton of bran would contain about $28 worth. In view of the fact that these fertilizing elements exist in an unavailable form in bran, their value should be discounted about 20 per cent, which would give a ton of bran a fertilizing value of about $15 in normal times and about $23 this year. We have never used bran as a fertilizer in any of our potato experiments, but it seems to me that it would be better economy, in view of the fact that 80 per cent of the fertilizing constituents of a feed reappear in the manure, to utilize the bran first as a feed and then apply the manure as a fertilizer.

Clean water and salt before stock all the time—an important item.

It is expensive to feed hog lice, and a man can't sell them for port, either.

Every time a man starts in business for himself he learns a lot of things he would rather not know.

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2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

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2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

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Farmer—Here is your opportunity.

6 head of pure-bred Hereford cattle, 4 head of grade Hereford cattle, all in pink of condition, for sale. I am going out of stock raising. Will make terms of payment easy to a responsible person.

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A fine Jersey Bull, well grown, of excellent breeding, will be sold very reasonable. 15 months old.

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Only ¼ mile to salt water, 40 acres in fields for corn, potatoes and hay; 10-cow pasture, wood and fruit, 5-room cottage house with attic; large barn in good condition, shop and two poultry houses. Daily mail, near neighbors and half mile to school. Owner in distant state needs quick cash and it is yours for $800. This is a dandy buy for investment, summer home or all-the-year farm. Don't wait. Write to-day for your free copy of "Strout's Money-Making Farms," and get travelling instructions on page 9. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston. Tel. Main 3348.

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We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N. S.

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Our present offering is a number of of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

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For Sale—Registered stock. Male or female.

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Registered Stock for Sale

Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. B. - Bloomfield Farm

Bargains in Ayrshires.

Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Helfer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

T. J. HAWKINS,
Stewacke, N. S.

RIVERVIEW STOCK FARM
Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

D. R. NICHOLSON, - Coxheath, N. S.

Eggs for Hatching from Exhibition Matings

Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

Single Comb R. I. Reds.
Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

Eggs from these pens $2.00 per 13.

KENTVILLE POULTRY YARDS,
KENTVILLE, N. S.

FOR SALE.

Bluebell View Holsteins are from the best stock to be had, being very closely related to two of the Toronto Champions. We shall have some Calves for Sale very soon, so write us for prices and don't forget we guarantee everything to be as represented.

WALTER PAYNE,
Bluebell ViewFarm, Lake Edward, N. B.

"Homestead Farm"
Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

LOGAN BROS., Amherst, N. S.

GUERNSEY BULLS !

I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA.

Applications for registry, transfer and membership, as well as requests for blank forms and all information regarding **The Farmers Most Profitable Cow** should be sent to the Secretary of the Association

W. A. CLEMONS, St. George, Ont.

SPRINGVALE HERD

Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

FRED S. BLACK & SONS,
AMHERST, N. S.

Maple Green Farm Holsteins

To avoid inbreeding, we now offer for sale our senior herd bull "Maple Grove Mercena Mercedes," coming 5 years old; weight about 2500 lbs., active, sure and exceptionally kind. His first daughter to be officially tested made 15.46 lbs. butter in 7 days at 1 year and 11 mos.; another at 2 years and 2 mos. was making nearly 3 lbs butter per day when she met with an accident and we had to drop testing her. His dam gave 12664 lbs. milk and 568 lbs. butter at 2 yrs. old in the R.O.P., and her sister Posch Mercedes Springbank 2nd, is the Canadian Champion 4 yr. old in the R.O.P. with 22000 lbs. milk and over 800 lbs. butter in the year. We are also offering Bull and Heifer Calves sired by him and "King Lyons Colantha" and out of high-class Record of Merit and Record of Performance Dams.

For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

Springbrook Ayrshires !

Present offering several choice Cows and Heifers, all ages, and Bulls ranging from 6 to 17 months, sired by our imported prize winner, Grange Kelly, and out of some of the best cows we ever owned. We have also two choice Bulls, about 15 months old, sired by Springbrook White King. We can also sell some nice grade Ayrshire Cows, fresh or about to freshen.

Write us your needs in the Ayrshire line—we have started many young breeders on the right track and have replenished the herds of some of the older breeders. We can supply your wants.

See our herd at the Halifax Exhibition or better still come to see our herd in home quarters. Interested parties always welcome.

McINTYRE BROS.,
SUSSEX, N. B.

BUFF ORPINGTONS

I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

Our breeding pens are mated as follows

PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.

PEN NO. 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eye, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

R. R. BLACK, "Elmhurst Farm,"
Oxford Junct., N.S.

SUNNYSIDE STOCK FARM
PRESENT OFFERING:—

Ayrshire Cattle—Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine—3 Brood Sows due to farrow in September, 6 young sows, 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

BELLEVUE STOCK FARM
Shorthorn attle and Shropshire Sheep

We have a number of choice young Shorthorn Bulls, heifers and young cows for sale at right prices. Three good Shorthorn Bulls, color Roan, age from 14 to 18 months. Let us quote your our prices for quality Stock.

C. A. ARCHIBALD, - Clifton, N. S.

Netherland Farm Holsteins and Yorkshires

Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

WM. S. HARDING, - Hammond River, N. B.

COBEQUID FARM HOLSTEINS

ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

All Bull and Heifer Calves advertised in previous issues sold. Present offering three good R O.M. Cows now milking. If desired will be bred to my herd sire, (son of Woodcrest Sir Clyde the $2000 Bull.) Also a Yearling Heifer already bred

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

AYRSHIRE BULL FOR SALE !

I have sold all my Bulls but one. He is 10 months old and an extra fine individual—is well built and growthy and now weighs 650 lbs. Is mostly white with few dark brown spots. His dam made in R. O. P. test as 3 years old 7492 lbs. milk and 306 lbs. butter fat. Also in R. O. P. test as 4 years old made 8917 lbs. milk and 356 lbs. butter fat. His sire's dam made 1318 lbs. milk and 530 lbs. butter fat in R. O. P. test in 12 mos. and in 15 mos. made 15159 lbs. milk. This bull is sure to make a good show animal, is in fine condition and has just passed the Tuberclin test O. K.

For further particulars apply to

ARTHUR S. DENNIS, Willow Farm, Stewiacke, N. S.

Poultrymen Attention !

The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.

Send for free Catalogue and give us a trial order

FARMS FOR SALE

Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
"The Real Estate Men"
Truro, - Nova Scotia

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER,
33 Jubilee Road, HALIFAX, N. S.

HOUDANS

The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast males. Combs and wattles protected by heavy crest and beard. Eggs $1.50 per 15. Cash with order.

W. J. M. MacLEOD, Sussex, N. B.

What You Want.

Eggs for hatching and day old chicks from Bred to lay Stock. Barred Plymouth Rocks, S. C. Rhode Island Reds, and White Wyandottes. Prices reasonable. Booking orders now for Chester White Pigs. One Yearling Holstein Bull of good breeding. Could spare also a few females.

N. W. EVELEIGH
"The Orchards" - Sussex, N.B.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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GOOD ROADS AND MARKETS

Both Essential for Farmer's Prosperity

Under the caption "Good Roads and Markets," in the June number of Vertical Farming, a monthly publication issued by E. I. du Pont de Memours & Company, the explosives manufacturers, of Wilmington, Delaware, Leigh Mitchell Hodges gives some valuable hints on the importance of good roads to the farmer's prosperity. We publish the article in question in full, and trust that it may be the means of helping to start a strong campaign for better roads in our rural communities. Better roads are needed badly.

Mr. Hodges' article follows:

Every farmer has Siamese twins.

One is crops—how to raise the most of the best for the least.

The other is marketing—how to sell the most for the most.

The band connecting these two is ROADS.

Byroads, highroads, and railroads.

As a rule, the farmer's concern ends at the railroad.

In most cases the byroad is his chief concern because it's the one nearest him.

It's the first link in his chain of transportation—the front door yard to his market.

Eight months in the year the average highroad—main artery of travel—is in at least fair condition. Not what it should be in this greatest of productive lands, but "navigable."

The farmer whose acres fringe such a road has the small end of the problem. A minority of farms are so favored, however. Most of them lie from one to five miles off this beaten track.

These are the miles that multiply the average farmer's hardships. They constitute his biggest problem, speaking marketwise. And manywise.

I know a farm in the north central part of Pennsylvaia that grows phenomenal crops. It yields "bumpers" year after year; yet man after man has failed on it and no one wants it.

Between it and the nearest railroad station are five miles of muddy, rutty grades. That haul eats profits as a dog eats stale fish.

The last owner sold it for less than he paid, and moved to a comparatively "poor" piece of land—with three miles of good road between him and "freight on board."

He raises about half as much and makes about twice as much money.

Just a difference in the byroad. That's all!

I know a man who has gone carefully into the figures of this road question. You know him, too. We call him Uncle Sam. And Uncle Sam, through his Department of Agriculture, says the farmers of this land are losing a total of $250,000,000 a year because of markets rendered inaccessible by bad roads!

A quarter of a billion dollars lost every twelve months — $33,000 for every hour of every weekday—because of the weakness of this link that binds the farmer to his market.

Even a poor business man will admit this is not good business. But what are we going to do about it?

That's up to the farmer, for in a great majority of cases this huge loss is due to unfit byroads which do not come in for state or federal aid or supervision. In many cases they are the absolute property of the farmer, who is responsible for their condition and upkeep.

The farmer's short cut to a market is to turn road builder!

The nation's short cut to prosperity of the lasting sort is road building. That this is appreciated is evidenced by forty-three state legislatures last year spending a large part of their time with road legislation.

Such attention is needed, for in this land of unparalleled productivity only onetenth of our total state highway mileage is surfaced.

If we could get a **byroad** statistics, probably we'd find less than one one-hundredth surfaced.

Probably we'd find the 99 per cent undrained, ungraded, bristling with rocks and stumps, and menaced by deep cuts or gulleys. Also rendered inefficient in the highest degree by steep grades that increase the cost of hauling at a rate ruinous to the pocketbook.

Talk to the average farmer about this obstacle to his success, and he'll come back with a blast about the cost of road building.

His position is weak—for two reasons.

In the first place, even if he and his neighbors in a township or a county had to spend a considerable sum, no better investment could be made.

Proof: A few years ago Spotsylvania County, Virginia, spent $100,000 on forty miles of road improvement. As a result, within one year outgoing shipments of farm produce increased 140 per cent.

In two years 65,000 tons of export products had been carried an average distance of eight miles at a demonstrated saving of 8 cents per ton mile —a total saving of $41,000 a year to the farmers on what they took to market!

In the second place, in many instances it is not a matter of costly road building, but of comparatively inexpensive correction of the conditions noted above. And in this day of dynamite, which has so notably eased and cheapened the bettering of roads, even the individual farmer, working with his ordinary help, can do much to remove the chief obstacles to market access.

To do this—to take out of the way the worst stumps and boulders and ditch the stretches that most need drainage—would bring about an economic and social revolution that would benefit the average farmer more than anything else that could be suggested.

It would mean reasonably good roads throughout the year.

This, in turn, would mean that the farmer could not only choose his time of marketing, but take advantage of the best market conditions.

It would largely prevent periodic railroad congestion, which frequently is a cause of loss to the man behind the crops.

Money needed for crop movement would be distributed over a longer period of time.

Under present conditions the farmer is the one producer who is compelled to market his goods within a limited period—and that, at times, a period unfavorable to his profits. This places him at the mercy of the middle men. Not infrequently it leaves him with a surplus on which he must take a large loss.

Crops must be speedily moved before poor roads break up in the fall. This not only entails a risk of profitable sale, but brings about a congestion of labor. For a few weeks the farmer and his help must overdo, although for several succeeding months they underdo. Such a division of labor makes for physical unfitness.

Stop, look, and listen to what one of Uncle Sam's hired men—Andrew Anderson, of the Public Roads Office—has to say about the full meaning of better roads. Here is his view, based on nation-wide study:

"We know that good roads are necessary in order that the farmers may take the fullest advantage of modern methods of marketing. They are a powerful factor in promoting better farm conditions throughout the country. They reduce the time and cost of transportation. They make the farmer more independent of seasonal and weather conditions, and permit him to take better advatage of markets and prices. They increase the value of his farm and so enhance his material wealth. They promote better agricultural methods and are necessary for an efficient rural delivery and parcel post.

"They have a profound effect on our country schools and the home life on the farm. Good roads are thus more than a market factor. But, whatever phase of their many-sided benefits we take up, we can never get entirely away from their influence on the point. In fact, good roads are the farmer's best and strongest help for better schools and improved home conditions."

Sometimes I wonder if the farmer fully appreciates the meaning of [illegible] as applied to his important place and his vast power as a regulator of world conditions.

Does he keep in mind the vital fact that commerce BEGINS on his byroad?

Does he remember that the mile or two between his barn or stable yard and the nearest approach to the levelest haul is in reality, the arbiter not only of his own family and financial prosperity, but of wrold advance?

Does he know that the highest tax he pays—and one that daily takes something out of his earnings—is a mud tax, a stump tax, a boulder tax, a no-ditch tax?

If he doesn't, he must. For these are prime considerations in the business of farming. They are prime factors in the conduct of farm life, in the making of comfortable farm homes and the bringing up of healthy, capable, well-inclined children.

The road that leads from his place is his largest asset or his heaviest liability—as he chooses.

It can make or unmake his market.

And his whole system of life and labor is dependent upon this market

Think about this!

HAY DAMAGED BY RAIN

Unfortunately there seems a likelihood that the hay crop this season, though bulky, may be damaged by rain. How serious the deterioration of the quality of hay may be has been shown by investigations and analysis.

Rain-damaged hay is notably deficient in some of the essential constituents, especially in phosphoric acid and lime, while in a lesser degree the alkaminoids are also lacking.

The total loss of dry substanec in the fodder is often quite 25 per cent, and it is not to be wondered at if stock fed on such impoverished material makes poor progress.

The practical moral to be drawn from the investigation is that when feeding stock with hay impoverished by rain, it is advisable to employ more coke and other concentrated feeding stuffs to make up for the nutritive defect of the hay.

When possible, provide for sheep some fresh, sweet pastures which are not infested with parasites.

Trim the loose tags of wool from about the udder and flanks of the ewes, and save the loss of lambs from [illegible] balls in their stomachs.

Cooling Milk in Hot Weather for Cheese Making

The two fundamental factors in producing a high-grade milk are: keeping dirt and bacteria out of the milk, and cooling the milk and keeping it cold. At this season of the year this latter factor becomes of very great importance. The producing of milk under strictly clean conditions is no excuse for not cooling this milk properly; neither is the proper cooling of milk a cure-all for dirty milk.

Effect of Varying Temperatures

In studying the necessity for cooling milk the question arises: How soon after milking should milk be cooled? In order to answer this question we must have some factor or term for measuring the effect upon the milk of holding it various times at various temperatures. In searching about in the various tests put to milk we find that the bacteria count of the milk is our best possible guide, since the number of bacteria in milk is determined by both the time and temperature at which the milk is held. Different experiment stations have done considerable work on this point to emphasize the necessity of cooling milk to a low temperature, and doing it soon after it is drawn.

The following figures taken from B. A. L. Bulletin No. 98 are striking:

Effect of time and temperature on the growth of bacteria in milk.

Temp.	Sample.	No. of bacteria per c. c. 24 hrs.	48 hrs.	96 hrs.
39 F	1	2,400	3,600	218,000
	2	38,000	56,000	4,300,000
46 F	1	3,100	12,000	1,480,000
	2	42,000	360,000	12,200,000
50 F	1	11,600	540,000	
	2	89,000	1,940,000	
55 F	1	18,800	3,400,000	
	2	187,000	38,000,000	
60 F	2	900,000	168,000,000	

Both of the samples were produced under better than ordinary conditions, as can be seen by the count after 24 hours at 39 F.

The following figures from a Storrs, Conn., bulletin show the effect of holding a sample of poor milk at 59 F. for 24 hours:

	Bacteria per c. c.
Milk drawn	153,000
After 1 hour at 59 F	616,000
After 4 hours at 59 F	680,000
After 7 hours at 59 F	1,020,000
After 9 hours at 59 F	2,040,000
After 24 hours at 59 F	85,000,000

By studying these two tables the answer to our two questions can be easily seen; first, milk should be cooled at once after milking—the sooner the better; second, milk should be cooled and held on the farm at least below 50 F., and preferably to 40 F.

Why bother with this cooling? Simply because the milk is a safer and better food product, and if it has not always brought more cash in the past it is bringing more today and will in the future.

The two general methods of disposing of milk are in bulk, in cans and bottles. Some of the same methods of cooling are applicable to both classes of milk, but the cooling of bulk milk will be discussed first. In general there are about five general methods of coolink bulk milk.

1—Setting cans of milk in still-air refrigerator.

2—Setting cans of milk in running water.

3—Settings cans of milk in ice water.

4—By running milk over a cooler.

5—Cooling by mechanical refrigeration.

The first method, namely, that of simply setting the cans of milk in a still-air refrigerator, would be the easiest way to cool milk if it proved to be practical. I say still air because while cold air in circulation will cool faster than still air, there would be no power on the majority of the farms to run a fan even though the milk could be properly cooled by so doing. As a matter of fact, it could not be perfectly cooled even by circulated air. Air takes heat out of cans of milk very slowly, and hence it is a poor cooling medium. To show how inefficient this method of cooling milk is, the writer carried on an experiment cooling a 40-quart can of milk in still air, ice-cooled refrigerator at a temperature 50 degrees F., and in a mechanically refrigerated refrigerator at a temperature of 32 degrees F. Two full cans of milk were placed in each refrigerator. One can in each lot was stirred every 15 minutes. The results appear in the following table:

Table showing time required for cooling stirred and unstirred milk in 40-quart cans in still-air refrigerators at the temperatures of 50 F. and 32 F.

Time.	50° F. Rgtor. Stir'd.	50° F. Rgtor. Not Stir'd.	32° F. Rgtor. Stir'd.	32° F. Rgtor. Not. Stir'd.
	Degrees F.		Degrees F.	
8.00 A.M.	92	92	92	92
8.15	92	..	90.5	..
8.30	90	..	89	..
8.45	89	92	87	90
9.00	87	91.5	85	89
9.15	85	90	83	87
9.30	84	90	81	86
9.45	83	88.5	79	84.5
10.00	81	86	77	84
8.00 A.M. 24 hrs. later	..	58	..	46

A study of the table shows that where warm milk (92 degrees F.) is placed in an ice-cooled refrigerator for two hours the temperature of the milk is lowered to 81 degrees F. when it is stirred with a conical can stirrer every 15 minutes; and to 86 degrees F. when the milk is not stirred. In 24 hours the unstirred milk had been cooled to 58 degrees F. only and had gone slightly sour. In the mechanically cooled room the stirred milk was cooled 4 degrees lower and the unstirred milk 2 degrees lower in 2 hours. In 24 hours the unstirred milk had cooled to 40 degrees F.

From the data we may conclude (1) that stirring milk every 15 minutes during first two hours of cooling results in a temperature 5 degrees to 7 degrees lower; (2) that milk cannot be quickly cooled and cooled to a sufficiently low temperature in either a room having a temperature of 50 degrees F. or 32 degrees F.

Use of Cooling Tank

The practice of cooling bulk milk in cans, setting the cans in a tank of running water, is very common. If one wishes to use this method, or to use ice water, he is confronted with the problem of providing a suitable tank. Wood and concrete make the best materials for cooling tanks, the latter to be preferred because it is more durable and sanitary.

In building a concrete tank a drain should be dug to the bottom of the tank, which should be far enough below the level of the floor in the milk room so that the top of the tank is about a foot above the floor. It is much easier to lift cans of milk in and out of a tank of this kind than a tank that is set on the milk-room floor. The sides of the tank should be reinforced concrete about 4 inches thick, and then, since concrete is a rather good conductor of heat and cold, it should be lined on the inside with two inches of compressed cork. The cork should be covered with metal lath, and a half-inch coat of rich mixture of concrete put on for finish.

The edge of the tank should be covered with angle iron to prevent chipping the concrete when lifting the cans in and out. The cover of the tank may be of wood, and be hinged on the back edge of the tank.

This makes a tank that is not very expensive, and one that will stand for all time.—H. E. Judkins.

SCALY LEGS OF FOWLS

This trouble, which is common in many flocks of fowls, is caused by a very small mite which lives under the scale of the legs. Any oily preparation having some penetrating power will kill the mites. The legs of affected fowls are best prepared for treatment by soaking them freely in warm, soapy water, using a brush to loosen the scales.

Effective remedies are sulphur ointment, kerosene and lard, caraway oil or one part of caraway oil mixed with four parts of lard or four parts of white vaseline. Sulphur ointment may be purchased at drug stores, or one can mix one part by weight of dry sulphur with nine parts of lard.

THE CLOVER CROP.

Editor The Maritime Farmer:

The excellent growth of clover throughout the St. John River valley must suggest to the wide-awake farmer the possibilities of seed production from this highly valued forage plant. To this end the following suggestions may prove opportune:

Where the growth of common Red Clover is very heavy seed production from the first crop cannot be relied upon to be a profitable crop, as the value of the hay is greatly lessened by allowing the crop to mature; moreover, the ripening is very uneven, and with cloudy or damp weather during the early stages of blooming the prospect of a profitable seed yield is small indeed, and such fields would better be cut for hay.

Should the clover field be composed mainly of the mammoth variety of red clover, which is considerably later than the common red, seed may be obtained from the first growth, as very little aftermath is produced from this variety.

This plant may be distinguished from the common red by its taller and usually more open growth, coarse hollow stems often very hairy, large pointed leaves. The plant is later in maturing than the common red and is often favored on this account when sown as a mixture, as it matures with the timothy. The greatest drawback is the woody character of the plant, and, too, the difficulty of procuring seed which is not mixed largely with that of the common red sort.

Where the stand of clover is lighter, or considerably mixed with timothy the prospects of a seed yield from the first crop may warrant allowing the hay crop to mature, as seed in sufficient quantity to pay well for threshing will doubtless be procured. This is certainly true of any reasonably clean stand of alsike clover which the writer has seen this season.

Harvesting the seed crop is best accomplished with the self-rake reaper, though a binder with the twine removed answers equally well. A mower followed by a horse rake is occasionally used, but this method is unsatisfactory. A table attachment for the mowing machine can be had from some manufacturers, which is quite satisfactory when followed by a man with a hand rake who rakes the swath off in bunches.

In any case, the bunches must be frequently turned to attain quick drying, which, too, aids in retaining a good color to the seed. Turning of the bunches should be done while they are still damp with dew to prevent shattering of the seed.

Cutting should not be done until a major portion of the crop is ripe, which condition can be ascertained by the darkening of the flower heads; these when shelled out in the hand will show the stage of maturity.

The farmers of the Ste. Hilare Agricultural Society, Madawaska County, have threshed their clover seed crop during the past two years with a clover-huller machine. The capacity of this machine is rated by the manufacturers to be from eighty to ninety bushels per day. This presumably would be from a heavy seed-yielding aftermath.

The practice in the Ste. Hilare district has been to thresh the hay crop matured with the first growth of clover, which in most instances was made up of a large percentage of timothy, mixed clovers, and rough hay. Such hay has yielded only at the rate of 30 pounds of clover seed to the load (a ton), the straw in these instances being prized as highly as before threshing; but in general the straw from a well-matured stand of clover cannot be considered to be of much value as hay.

Threshing can be accomplished by means of the ordinary threshing mill by closing up a portion of the feed space and also back of the cylinder with strips of board, thus causing the hay to pass through more slowly. However, even this method does not secure but a portion of the seed, and as the wind in this instance must be entirely shut off a great deal of cleaning is afterward necessary.

The clover-huller by one operation threshes and cleans seed of the various clovers, alfalfa, and timothy. An element of uncertainty, however, pervades the growing of clover or alfalfa seed as an industry, inasmuch as weather conditions at the time of flowering largely govern the prospective seed yields. These plans are insect pollenized, and hence should the weather during the early blossoming period of the crop be wet or cloudy the fertilization of blossoms is not to any degree accomplished, and a poor setting of seed results.

It may be deducted that the seed yield from much of the present first crop of common Red Clover throughout Carleton County cannot be expected to prove a profitable venture, as the crop is exceptionally heavy, and such stands are not productive of seed in any great quantity in view of the period of wet weather during the latter days of June. However, where White Dutch or Alsike is now well into bloom, and, too, where Red Clover has not been of so profuse growth, the outlook for securing seed is good. Where the first crop of common red has already been removed there is promise of securing a seed yield from the aftermath.

The all-too-common practice of relying upon the natural seeding of our hay fields with clover is not to be commended with such an unused source of seed supply at hand.

For the benefit of those who may harvest a clover crop for seed production purposes the Provincial Department of Agriculture purposes securing

(Continued on page 713)

Features Gathered From the N. B. Women's Institute Reports

(Continued from May 16th issue)

Codys.—Organized October, 1914. Membership 27, average attendance 15. Meetings held first Tuesday of each month. These meetings are serving as a centre from which many good results are radiating. Not the least of these is the fact that the women of our community have become better acquainted with each other; and unconsciously, as we fulfil the requirement of our institute, we are solving in a large measure the social problem of our community. Interesting and beneficial discussions on "Varnishes," "Canning Fruit and Vegetables," and "Pickling." Splendid papers on "How to Make Our Institute Meetings Interesting and Helpful," "The True Christmas Spirit," and "Our Flag, and What It Stands for." In May splendid demonstration on "Home Nursing" by Miss Imogene Jonah. Generous contributions made to the Belgian Relief Fund. Ten dollars contributed to Ambulance Fund. During the year our members have displayed the greatest interest in the work and aim of the institute, and we hope to maintain this interest, and press on to the development of a love for higher and nobler ideals in life.

Gagetown. — Organized September, 1913. At first our idea was to improve the appearance of the town. The first year street lamps were installed, which were during the past year supplemented by three tubular burners of more improved pattern. The oil was in part donated, and a man hired to keep the lamps in order and to light them each evening. It was rather a problem to get some one to attend to them regularly, and when the war began our thoughts turned to more serious subjects and it was felt the funds should be kept for work of a patriotic nature. If London could go with streets unlighted we felt that Gagetown could do the same! During the winter our meetings were well attended and served as a social bond. A committee was appointed at the close of each meeting to take charge for the following month. In this way variety and interest were given to the meetings. Each evening was devoted to some special topic. One was a Patriotic Evening, with letters from the front, suggestions for Red Cross work, and patriotic poems and songs; another a Housewives' Evening, and still another a Military Evening, in which some time was devoted to learning about military insignia, rank, the formation of the various units, etc. Ten dollars was voted to the Motor Ambulance Fund, and we were glad to feel that we had a share, even though a small one, in this noble work. During the year, through the efforts of the institute, a water tank was installed in the primary department of the school, with individual drinking cups. In October we had a very enthusiastic meeting, the chief topic of which was Soldiers' Comforts. Ten dollars was voted for the Soldiers' Comfort Fund. We are going to devote our energies to working for Soldiers' Comforts, thus supplementing the work of the Red Cross Society, which has a branch here. At our monthly meetings we intend to follow the war, studying it from its various aspects. Altogether we are looking forward to a useful and busy winter for our branch. Before the war, as we considered the institute motto, "For Home and Country," we felt that in working for our homes we were working for our country; now we realize that it is only by working for our country that we can preserve our homes.

Minto.—Organized in July, 1915. Three regular monthly meetings have been held since that time, and the present membership is 18. We have a Sewing Circle in connection, which meets every two weeks at the homes of the members. Receipts of a Box Social and Fancy Sale, $53.78; $15 of which was forwarded to the disablement Fund. We have not as yet reached out along lines of public work, but trust that we may be able to do so later, as we get more established in our work.

Queenstown.—Organized in October, 1914, with a membership of 7, which has since increased to 24. Twelve meetings have been held, with an average attendance of 11. Since organization this institute has been engaged chiefly in patriotic work. One hundred and fifty-six dollars has been raised in various ways and distributed as follows: Red Cross Society, $55; Belgian Relief Fund, $10; Sock and Ambulance Fund, $36; endowing a bed in Dr. McLaren's Hospital, $50; Overseas Tobacco Fund, $5. Besides this, 374 articles, including socks and hospital supplies, have been forwarded to the Red Cross Society, St. John, N. B.

Welsford.—Third annual report from this institute. During the year the meetings were fairly well attended. For the first six months of the year programs were printed, which proved quite a success. Special mention should be given to the June number, which was a "Grandmothers' Meeting." Everything was in keeping with the olden times, even the flowers were the old-fashioned kind, such as "old man." The grandmothers entertained by telling of the customs of long ago.

During the past year the institutes have had one common task before them by this great and terrible war. A great deal of work has been done, making hospital supplies and knitting socks, which have been forwarded through the Red Cross Society at St. John. Four packages of clothing have been sent to the Belgians. Thirty-six dollars and forty-six cents was raised by the sale of buttons for the Motor Ambulance Fund, and $15 of the institute funds were contributed for the same purpose.

Through the influence of the Women's Institute a great improvement has been made in the road around Eagle Rock.

Campbellton.—During the past year the efforts of the Campbellton Women's Institute have been devoted exclusively to patriotic work. The taking up of Red Cross work by the Women's Institute secured the hearty support of the people of Campbellton and vicinity. While the number of members for the past year has only been 24, yet they have been most successful in securing help from other ladies.

Money was raised during the year in the following ways: Three teas, bean guessing contest, sale flag pins, three patriotic concerts, Red Cross dance, May Day sale at Marquis & Co. store, 10 per cent being the share of for the W. I. on all cash sales; flowers, tea, cake, and candy were sold on the same day, and a garden party. Apart from donations received during the year, a collection was taken up for the Hospital Ship Fund, which amounted to $479.85. The total cash receipts for the year amounted to $1 379.46. Following are the objects contributed to:

Hospital Ship Fund	$479.85
Five cots in Le Tonquet Hospital, France	250.00
N. B. W. I. Motor Ambulance	50.00
Upkeep of cots at Le Tonquet	25.00
Mrs. E. A. Smith for 55th Bat. Band instruments	20.00
Campbellton Band	24.18
Campbellton Boy Scouts	5.00
Planting of trees in Campbellton	75.00

Besides these, $377.28 was spent in purchasing materials, from which 1500 articles, including socks and hospital supplies, were shipped to the soldiers.

Dalhousie—Organized in September, 1914, with a membership of 14. Since then the membership has increased to 37. Meetings now held in Church of England Sunday School hall. As this branch was organized shortly after the outbreak of war, patriotic work was immediately taken up. Every Tuesday afternoon and evening we meet for work, while the evening of the second Tuesday of each month is devoted to business.

Last fall we realized $101.55 from a patriotic concert. The proceeds were divided between the Belgian Relief and Red Cross funds. Since then we have raised $632.00 by various means, such as a tag day, a social, the sale of home-made candy, etc. Of that sum $358 was raised by voluntary contributions. Two hospital beds have been provided for, one at Le Tonquet, in France, and one at the Duchess of Connaught's Hospital. Twenty-five dollars was contributed toward the Motor Ambulance Fund, and $75 voted to the Canadian Red Cross Society for the purchase of surgical supplies. The remainder has been used for buying yarn for socks, materials for hospital garments, etc., and comforts for the soldiers in the trenches. When the war is over we hope to take up other lines of work, such as the Women's Institute is regularly engaged in.

Chance Harbor.—Organized in August, 1914, with a membership of 13. In the past year 10 meetings have been held and different subjects taken up, such as "Ways of Entertaining Small Children at Home," "First Aid to the Injured," etc. Books on "Home Nursing," "Home Cooking," "Home Decoration," and others were distributed to the members.

The receipts of a patriotic concert held in June were $28.75, $25.00 of which was contributed to the Motor Ambulance Fund. Two barrels of clothing were collected for the Belgians and $29 was contributed to the Belgian Relief Fund. One dozen hospital shirts were donated by the institute, and yarn ad material for pajamas were received from the Daughters of the Empire.

Lorneville.—Eleven meetings held during past year. Special feature at one meeting being prize for the best worked buttonhole, at another a prize was given for neatest pieced block of quilt. Another special feature was a guessing cake, five cents a guess as to what was in cake, and the same for the weight of the cake. Through the efforts of the Women's Institute the temperance organization has been revived. For patriotic purposes $24.15 was given the Ambulance Fund and $10.00 the Hospital Ship Fund.

Fredericton Junction.—Organized in August, 1914, with a membership of 12. Present membership 23. Average attendance 12. Programmes have been varied, solos, readings, and recitations, with papers on different subjects, such as "Neighborliness," "Canning and Preserving," "Milk," "Flag and Country," "Current Events," "Flies," "Floor Coverings," "Red Cross Work," etc. Circulating library formed in the winter, each member contributing a book. Committee appointed each month to visit the school. Post card shower given to member ill at a distant hospital, and a member ill in Fredericton Hospital was supplied with fresh flowers regularly.

Five dollars was contributed to the Motor Ambulance Fund and $10.25 to the Soldiers' Sock Fund. Ten pounds of yarn bought and now being knit into socks for the soldiers.

Hoyt Station. Seventeen regular meetings held during year, and two special meetings. Present membership 20. Fourteen papers read, written by the members, and one debate held. Money realized during year $187.23. Given toward patriotic objects $92.57, for improvements for school $37.19, for cooking utensils for kitchen in hall $5.73. Members have formed a circulating library. Visits have been exchanged with the Fredericton Junction Institute.

Ripples. Organized July, 1915, with membership of 11, which has since increased to 22, the average attendance being 14. Three regular meetings and one special meeting held. Receipts of Blind Auction $30.25, which was forwarded to the Disablement Fund. Being one of the baby branches, not much work has yet been accomplished, but the outlook is very bright.

Andover.—A good live institute, with most of its members interested and working, is what counts, even if its membership is not large.

Our programmes are arranged by a committee for each meeting. This is not a very strenuous task, as our roll call is already arranged for the year. Each member chooses a subject and gives a contribution on that subject at each meeting throughout the year. The subjects chosen by some of the members are: Immigration, Botany, Missions, Temperance, History, Noted Men, Noted Women, Household Hints, Poetry, Deportment, etc. We believe that this part of the programme will be interesting and helpful to the members in general, but especially helpful to the woman who studies up on one subject for a year.

The needs caused by this fearful war have seemed to come before anything else. We sent $65.00 to the Motor Ambulance Fund in July. In order to raise funds we resorted to the usual methods, ask people to contribute something to eat and then invite them to come and eat it, and pay for the privilege of doing so. We had a strawberry festival, an ice-cream social, etc. It is wonderful the eating and drinking we have done the past year in order that the hungry might be fed and the sick ad wounded provided for, and our community is not unique in this, according to the newspapers.

Of course this is not the only way in which we make sacrifices for the good of the Empire. When the appeal for contributions to the Machine Gun Fund came to our institute we were just then contributing in cash for the same fund, through another medium. But, giving of our abundance, or even when it pinches, can scarcely be called sacrifice. When we give our flesh and blood then we know the true meaning of the word.

We are interested in school work, and voted last year that a committee be appointed to attend the annual school meeting: this was carried out in some of the districts at least. A good representation from our institute attended the meeting when the question of consolidation came up this year. We take our Red Cross knitting to institute meetings, and our fingers keep pace with our tongues.

Our annual meeting in July is the occasion of a picnic to which our husbands are invited. The gentlemen are asked to make after-dinner speeches. They say all the nice things they can think of about us, and we are pleased and happy.

Our institute met with an irreparable loss about two months ago in the death of our honorary member, the late Mr. George E. Baxter. Mr. Baxter was one of our charter members and was seldom absent from a meeting. He was always ready with a word of encouragement, and his helpful suggestions and practical advice have been invaluable to us. He was always much interested in the cause of education and in the cause of temperance, and especially temperance teaching in the schools. Our institute thinks it fitting that in honor of his memory and appreciation of his help we should give a medal yearly to the pupil of the Andover Grammar School showing the highest proficiency in any one or in all subjects, as the institute may decide. For 1916 the medal, to be known as the Baxter Memorial Medal, will be given to the member of the graduating class who shall write the best essay on "The Evils of Intemperance, and How Best to Remedy Them."

Grand Falls.—Membership increased from 20 to 47 in past year. Time principally devoted to work for the soldiers. Money contributed to the following patriotic objects: $215.00 to the Hospital Ship Fund; $50.00 for a bed in Colonel Shillingworth's Hospital; $48 to Motor Ambulance Fund; $45 to Belgian Relief Fund; $25 for hospital supplies; and $30 for Grand Falls Machine Gun Fund. Over 300 pairs of socks and 12 quilts have been forwarded; 1 large box of garments for the Belgians, and a box of comforts to boys at Valcartier. Money has been raised in the following ways: Tag day. $75; patriotic tea and sale, $50; strawberry festival, $30; also by serving lunches at dances and voluntary contributions.

One of the institute members, Miss Irene McCluskey, was heroically rescued from drowning in December last by Mr. George Tuck. The institute obtained from the Canadian Government a Royal Humane Society medal for Mr. Tuck.

Many interesting papers read on subjects such as "The Duty of Members Toward One Another," "Home Nursing," "Civic Improvement," "The Care of a Baby," "Training Young Girls to Become Independent," etc. Pleasant visits interchanged with the New Denmark Institute.

New Denmark.—Organized September, 1914, with a membership of 15, which has since increased to 26. The average attendance is 14. Programs made out for six months. One or two interesting papers read at each meeting, some of the most interesting being "The Great and Good Women of Canada" "Christmas Spirit," "Good Resolutions for the New Year," "Friendship and Sociability," "The Twentieth Century Farmer's Wife," "Our Flag and What It Stands For." A very interesting lecture given by Rev. F. J. Howell on "Education, Its Uses and Value."

The first money collected for patriotic purposes was for the Patriotic Fund, being $184.75. The sum of $14.07 which had been collected to establish a library was used to help equip a hospital bed. Results of picnic, $5.00; proceeds of pie social, $74.30. One of the members donated $4.25, making a total of $97.50 to be spent on hospital bed and Red Cross work. One hundred pairs of socks have also been forwarded to the soldiers.

In June the Grand Falls Institute was entertained, and on Labor Day they more than returned the compliment by inviting the New Denmark Institute to a picnic, which was an unqualified success.

South Tilley.—Organized in September, 1914, with a membership of nine, which has since increased to 19. Principal work is comforts for the soldiers. Sixty pairs of socks have already been forwarded and the good work is still going on. The joint proceeds of a Burns' celebration held in January and a picnic in August amounted to $72, which was divided between the Belgian Relief Fund and Red Cross work. The institute was visited in September by Mrs. Porter and Mrs. Bedell of Andover. Mrs. Porter gave us many useful suggestions in promoting the work of the institute, and Mrs. Bedell gave a very interesting description of her visit to Valcartier. The institutes subscribes to two magazines: The Canadian Home Journal and the Mother's Magazine.

Petitcodiac.—Organized in August, 1914, with 11 members, and has since increased to 43.

Interest in the Belgians first claimed the attention of the institute. Contributions consisting of food, bedding, clothing, and money to the amount of $1,000.00 were sent to the Relief Committee. A prize was given in each department of the school by the institute. During the vacation the members also made picnic teas for the school children after working in their school garden plot. Ten dollars and fifty cents has been given to the Red Cross Society. A number of interesting papers have been read and recipes exchanged. At the February meeting Mr. T. T. Goodwin taught a lesson in parliamentary procedure and business methods. In June Dr. Townsend, of River Glade Sanitorium, gave an illustrated lecture on "Tuberculosis and Its Prevention." Thirty-five dollars has been sent to the Motor Ambulance Fund. The institute is also interested in village improvement work.

Bayfield.—Organized in September, 1912, with membership of 9, which has since increased to 25. Fifteen regular meetings have been held during the year. Four large boxes have been shipped to the suffering Belgians. Red Cross work has been taken up, and four large boxes were shipped to the soldiers. During the summer money was raised by concerts and the sale of ice cream, etc. This money is to be used for material for Red Cross work during the winter. Some interesting papers have been read and a number of books have been purchased and are exchanged among the members each month.

Point De Bute.—Organized in November, 1913. Present membership of 32, with average attendance of 18. Meetings held at the homes of the members. Principal work being Red Cross and Soldiers' Comforts. Programmes made out for the entire year. Tea is also sold at each meeting. The funds raised in this way are spent in material for Red Cross supplies. Over 130 articles, including socks, hospital supplies, and soldiers' comforts, have already been forwarded.

Port Elgin.—This institute has had a busy year. Red Cross work was begun in September, a little more than a month after the outbreak of the war. The first contribution was $60 to the Hospital Ship Fund. In October $7 was contributed to the Belgian Relief Fund, and eight barrels of clothing were forwarded to the Belgian Relief Committee. Two hundred knitted articles have been forwarded to the front and 142 made garments sent to the Red Cross. In November it was decided to work under the auspices of the I. O. D. F., thus taking advantage of the county grant of $200. At the December meeting many easily made Christmas gifts were exhibited and a demonstration given of home-made candy. Also paper on "The True Spirit of Christmas Giving." Forty-two lbs. of turkey were sent to St. John to form part of the Christmas dinner for the soldiers stationed there. The directors of the fancy work and bread classes of the Botsford and Westmorland Agricultural Society were appointed at the February meeting. It was voted to give a special prize for a night dress to be hand sewn and trimmed with hand-made crochet lace. first prize $1.00, second prize 75 cents, third prize 50 cents. Five dollars was voted to the Red Cross for medical supplies. Later a quilting bee was held and two quilts were sent in Red Cross box. Fifty dollars was given to the Ambulance Fund.

Upper Sackville.—Organized in September, 1912. Present membership 36. Motto "If you know a good thing—pass it on!" Important discussions on such subjects as "Should a Wife Understand Her Husband's Business?" "Fireless Cooker," "Montessori Principles," and "Modern Implements of War." "Canada Day" was the occasion of papers on "Resources of Canada," "History of Canada," and Canadian quotations. Programmes typed for six months and passed among the members. Cabinets supplied schools for individual drinking cups, also given by the institute. Two large boxes were sent to the Belgians. Ninety dollars has been raised for patriotic and Red Cross purposes. Five dollars raised by a sale of "Allied for Right" buttons.

Burtt's Corner.—Organized in June, 1915. Present membership 28. Special attention has been given to Red Cross and Soldiers' Comfort work. One box containing 64 articles, including socks and hospital supplies, has already been forwarded. From various sources $64.65 has been raised, of which $19.88 has been used for the purchase of material for Red Cross work. The members have taken splendidly to the institute work and hope to have another box of Red Cross supplies ready for shipment in the near future.

Dumfries.—Organized in October, 1914. Membership 15. Roll call answered during past year with quotations from different authors. Interesting papers on "What Could Women do in Time of War?" "Growing Friendly Flowers," and "What is Bread?" In August a very successful pie social and ice cream sale was held, the sum of $46.50 being realized. After this the members met and cleaned and papered the school house. In September the members of the institute met at the home of their president, Miss Lounsbury, and presented her with an address and a silver bread tray as an appreciation of her services as president. Miss Lounsbury was married on September 29th, but does not leave the neighborhood, so will continue with us in the good work.

Red Cross work was taken up during the winter months and 52 articles, including socks and hospital supplies, were sent to the Daughters of the Empire, Fredericton. Donation was received from a nearby lumber camp of $21.01 for Red Cross work. Five dollars was contributed to the Motor Ambulance Fund.

Fredericton.—In recalling the work of the Fredericton Women's Institute since the convention held in May, 1914, it is difficult to relate what we have accomplished; but, with a paid membership of thirty-one, we have been striving to do our "bit" in improving our homes and the community. By social gatherings from home to home every month we have no doubt influenced one another for good, and thus uplifted to some extent our home life. We have tried to better certain conditions that existed in our city as well.

We had planned to take during the year a course of study on "Women's Work in the World," studying one topic a quarter, under such headings as "Woman in the Home," "Woman in Business," and "Canadian Heroines," but, as with all the institutes and other women's associations, our plans for study and work were suddenly changed and a new and sacred duty given us to perform—work for our dear ones who went forth to fight that we might always have our peaceful Canadian homes. As an institute we have accomplished little in Red Cross work, but many of our members, who belong to different associations, have done their share in the great work. In the year that is before us we must put forth greater effort, for the need is greater.

At one of our meetings held shortly after the last convention a plea was made by a member of the King's Daughters that our institute combine with that and other women's associations in Fredericton in establishing a women's rest room, our branch to have charge of a sewing class for girls. The need for a rest room in this city is great, but the proportion had to be laid aside when Red Cross work became the greater need.

Our institute voiced the question last year of the care and protection of our shade trees. This matter we put before the city council, urging the need of appointing a commission and that the trees along the streets be cared for by the Department of Forestry of the University of New Brunswick.

The Curfew Bell question was taken up soon after our organization in November, 1913, and although "no curfew tolls the knell of parting day," the police have been given orders to see that all children under fourteen years of age, unaccompanied by a guardian, are off the streets at nine o'clock.

Our members have been endeavoring to make it compulsory that bread be securely wrapped in paper before it leaves the bakery. Two St. John firms are delivering bread in this way in this city, the price per loaf being the same as for unwrapped bread, but the weight one and a half pounds instead of two. We hope the day is not far distant when the Provincial Board of Health will take this question up. What is exposed to germs more than a loaf of unwrapped baker's bread?

Another article of food which is very often delivered to the housekeeper uncovered, except with dust, etc., is meat. The members of our institute have agreed whenever meat is delivered to them improperly tied up to return it to the meat shop to be wrapped in paper and securely tied.

We have resolved if we neglect to send in orders in plenty of time for their delivery before evening, to go down town and carry our purchases home ourselves. We are trying to persuade our friends as well to get their orders in early in the day, so that the delivery teams will not have to be out until the "wee sma'" hours.

Not until lately have the country women coming into the market had a suitable rest room or a place to warm themselves in winter. Our institute took up with the chairman of the market committee of the city council the question of equipping a room for this purpose in the basement of the City Hall. We are glad to say that the council has had the place renovated and employ a woman to keep it clean, and we have placed stationery and magazines in the room. This is much appreciated by the women coming to market, especially after a long and sometimes very cold drive.

The secretary of the Fredericton Exhibition Association left the placing of women's exhibits, caring for the exhibits, and the appointment of judges for women's work this year in the hands of our institute. The entries were numbered instead of being inscribed with the exhibitor's name, so in this way no partiality was shown. Two competent Domestic Science teachers and one efficient housekeeper were appointed as judges. Twenty-two dollars in prizes were offered by the Fredericton Women's Institute to the women of this city for different lines of cookery, and the competition was a very interesting one, several of our members being among the prize winners.

As an institute, we exhibited cookery in the departmental competition, and although we did not take a prize the five-dollar prize offered by the Department of Agriculture for the best home-made labor-saving device was won by one of our members. We hope that in future work of this kind will be encouraged by the department

(Continued on page 712)

THE MARITIME FARMER.

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AUGUST 8, 1916

DATES OF ISSUE

August	8—29
September	12—26
October	10—24
November	7—21
December	5—19

PSYCHOLOGY OF FAIRS

The Maritime Farmer considers an effort to improve the standard of our county fairs a very necessary adjunct to increasing the usefulness of all agencies for promoting agriculture and agricultural practices. This, however, is much easier said than done. We consider it a real problem.

It is important to consider the incentive and frame of mind of the average farmer or citizen who attends our county fairs. We fear, through habit developed over a series of years, that the average person visits the county fairs as a pleasure seeker. It is supposed to be, in a great many sections, the principal frolic of the season. The average person is curious to see what is on display in the several departments, but in most cases his desire is satisfied by wondering just how such things are produced rather than to go into details as to how such a result was accomplished. He is at the fair for pleasure; he wants to see it all in one day, and therefore does not desire to go into detail about anything of a serious nature.

There are of course many exceptions, especially among exhibitors in any particular industry. These persons like to watch the judges, to see in what respect their exhibit loses out. It is a question here if the money end of the proposition (prizes) is not the propelling force rather than what can be learned to put in general practice on the farm. From our observation, the average person will thus glance over the exhibits at the county fair in about two hours, remaining at any one place only a short time for fear he will not get over all by the time the races or other special attractions begin.

It must be further remembered that the county fair is the great attraction of the year to many farmer boys and girls. The parents must accompany the children and this is an added reason for the family, as it were, to be continually on the move at the fair. If this depicts the general frame of mind of the average visitor to the county fair, then the problem of the county fair is to first meet the demand of the people in amusement; second, to come out financially on the right side of the ledger; third, to be an inspiration to its constituents and serve as a real educational factor in the county.

LOAFING LIVE STOCK

Under the above caption the following editorial appeared in a recent issue of "The Breeders' Gazette." Ponder it well:

"A young farmer accounted for his small income balance last year by explaining that his cattle and hogs gave meager returns. His bull proved impotent, so that he raised only 3 calves from a dozen cows. His sows farrowed weak pigs and lost most of them, but he kept them on through the summer to try again. The consequence was that a lot of good grass, hay, and corn went down the throats of unproductive animals. His loafing animals ate nearly as much as any in the neighborhood, and paid back but little for their board. With fairly accurate accounts he and two neighbors figured their year's balances. All had farms of the same acreage and all had about the same range of experience. His net returns were just about the same; the difference was cut entirely from the profits.

"There is no room on $250 land for idle stock. Grown animals must pay their way by working in the field or by breeding, and young stock must grow and become constantly more valuable. Loafing stock costs more than the owner usually suspects. Much of this failure shows plainest when the spring crop of calves, pigs, or lambs is counted. One farm will show 100 pigs from perhaps 15 sows, while another has 20 sows to raise about the same number of offspring. In one pasture one finds possibly 8 cows, each of which is raising a salf, and in another there may be a dozen cows but only 8 calves in the barn lot. Frequently the contrast is greater. The shy, barren, or unmotherly females, or the impotent males, that may be to blame are undesirables of the most unprofitable kind. Production must be a prime consideration. The females which annually show up a big count of young at weaning time will pay their way eve if some discount must be made on the score of quality. The best thing about it is that both numbers and quality can be secured together. One of the successful neighbors mentioned raised 5 excellent pure-bred calves from 5 cows."

DAYLIGHT IN FARM BUILDINGS

One of the commonest mistakes made in planning Canadian farm buildings is the small number of windows in the stables. In the placing of the buildings, in their relation to one another or to other surroundings, care may have been taken, but in so many instances there has been an utter disregard of the proper lighting of the stables. Many fine barns and stables, well painted, and of excellent outward appearance, are miserably lighted and are dark and gloomy within.

Prevention is better than cure, and light is the cheapest preventive measure known against disease. Dark and dingy stables are much more [illegible] of comfort and health, which means, incidentally greater profits, let us have more light in our farm buildings.

DON'T TORMENT--DON'T WASTE ADVERTISING MONEY

Two conditions, equally aggravating, always crop up at this time of year. Breeders of pure-breds advertise more extensively at this season and during the fall, and they pay good money for the service the agricultural journals render—at least, most of them do in time. They want to reach prospective buyers of their breed, and most of them cannot afford to carry on active breed propaganda work to any extent.

There are always a number of people who answer these advertisements from no other imaginable reason than curiosity, or to show the postmaster that he isn't the only man in the community who has mail come to his house. If you have any intention of buying stock, or any other commodity, by all means get comparative prices from various breeders, and mention the paper you saw the advertisement in; but don't make a nuisance of yourself by inquiring if you have no intention of buying.

On the other hand, some breeders are altogether too lax about answering inquiries. When some breeders run low, or if an inquiry reaches them from some point they cannot conveniently ship to, or if the letter does not appeal to them, they absolutely disregard it, and the inquirer is left in the dark. Failure to reply to inquiries wastes money, handicaps future business, and exhibits a lack of courtesy. Even though there are some inquirers who write from sheer curiosity, most of them have some idea of buying. Treat them with courtesy, anyway. It is coming to the inquirer, to the breed you represent, and to yourself.

Friendly rivalry between breeders of different kinds of stock forms an excellent incentive to raise the standards of animal husbandry, but it should not go farther than the friendly rivalry. The fact that one cow holds a record does not prove that her breed is best, but it does prove that she is an excellent individual, and excellent individuals may be developed from a number of breeds. Don't try to pick out the best breeds. Pick out the breed you like the best, and then spend all your time, study, and effort in developing the best possible individuals from your herd.

One of the best ways of doing this is to buy a pure-bred sire. You cannot get one that is too good. He will increase the production of your herd rapidly and cheaply, no matter what his cost. For the man who does not feel that he can afford to buy a herd of pure-bred cows, this is the best and most effective procedure.

A wagon road is no better than the worst hole in it, and the repair and grading up of our roads would not only add vastly to the size of the load we could haul over most of them, but much of the wear and tear of wagons and machinery and sacrifice of horses would be eliminated.

Don't allow the prospects of a heavy fruit crop to tempt you into leaving more fruit on the trees than they can properly sustain. By thinning it out the quantity will be greater and the quality much better than where it is crowded, and the danger from insects is also diminished.

HORTICULTURE.

BORDEAUX AND THE BLUESTONE QUESTION

G. C. Starcher, Associate Horticulturist, Virginia Polytechnic Institute

"Should I use the 4-5-50 Bordeaux formula and arsenate of lead when bluestone costs 30 cents per pound, or should I substituto some prepared spray material?" is a question many fruit growers are now asking. As an answer, let us compare the above formula with two Bordeaux and arsenate of lead paste substitu
largely sold in Virginia. Bordeaux made according to the Virginia formula contains:

Bluestone, 4 lbs., at 30 cents	$1.20
Stone lime, 5 lbs., when slacked 6.6 lbs., at ½ cent	.03
Powdered arsenate of lead, 1 lb., equal to 2 lbs. paste lead, at 17 cents	.17
Total dry materials 11.6 lbs, cost	$1.40

Don't Use Guesswork

It is wrong to use guesswork in discussing a problem like this, but since our fruit growers are guessing in a haphazard way let us guess intelligently. Since the substitutes mentioned below are in the form of paste, let us, for the sake of comparison, assume that they contain 20 per cent water. Adding 20 per cent water to 11.6 pounds dry materials in formula above, we have 13.9 pounds paste to each barrel, at a cost of $1.40 per barrel, or almost exactly 10 cents per pound. And this is a material about which there is no question of doubt. No substitute, pound for pound, can be better. Substitute No. 1 costs 20 cents per pound in small lots and as low as 14 cents in larger quantities. Substitute No. 2 costs the same price, but eight pounds are supposed to be used to each fifty gallons of solution instead of five pounds in the recommendations for No. 1.

Certain paste Bordeaux preparations contain as much as 62 per cent total moisture, a part of which is chemical moisture.

In other words, Bordeaux properly made with bluestone at 44 cents per pound is as cheap and more safe to use than substitute paste material now being sold. You know what you are using when you make your own Bordeaux. And this is not meant as a condemnation of the prepared materials. Some have good records. Many are new. They are convenient to use, but all must be carefully agitated while being sprayed.

A paste material containing the amount of bluestone lime and arsenate of lead recommended in Virginia for the June spray for bitter rot and second brood of codling moth to make 50 gallons solution must weigh at least 14 pounds. It is unwise and unfair to compare Bordeaux with other materials on any other basis.

How to Make Bordeaux

Bordeaux is made as follows: Dissolve the bluestone by suspending the desired number of pounds in a sack at the top of a wooden or earthen vessel containing an equal number of gallons of water. Slake the desired number of pounds of stone lime and dilute to an equal number of gallons of water. These are stock solutions and each gallon contains one pound of the respective chemicals. When ready to mix to the desired number of gallons of each of the stock solutions, add four gallons water, then pour these diluted solutions into the spray tank at the same time. Add the arsenate of lead in a sufficient amount of water to fill the tank, or enough water alone if no lead is to be used. Bordeaux is the standard spray for bitter rot and blotch of apple, potato and tomato blight, and various diseases of the grape, melons, and other vines. Do not use on peach, cherry, or plum. The formula is varied to suit special conditions.

WHY PYROX IS BETTER THAN BORDEAUX

O. B. Briggs, Local Manager, Bowker Insecticide Co.

It is undoubtedly Prof. Starcher's desire, as it is ours, that the Virginia fruit grower get the greatest possible value for his money when he buys his spray material. This at least is common ground, and if we have to differ with Prof. Starcher's conclusions it is because we interpret differently the figures that he has used in regard to the cost of home-made Bordeaux and arsenate of lead mixture as compared with the cost of Pyrox.

Prof. Starcher's conclusions seem to be based on the following statements that he makes: "A paste material containing the amount of bluestone, lime, and arsenate of lead recommended in Virginia for the June spray for bitter rot ad second brood of codling moth to make fifty gallons solution must weigh at least fourteen pounds. It is unwise and unfair to compare Bordeaux with other materials on any other basis." He also says: "No substitute, pound for pound, can be better."

Comparison of Strength

We do not know how Prof. Starcher has arrived at these conclusions, and we cannot see how they are based on facts. We will accept his own statement that it requires fourteen pounds of his home-made bordeaux and arsenate of lead mixture made according to the formula used in Virginia to make fifty gallons of solution. A solution of Pyrox made fourteen pounds to fifty gallons of water would surely be excessively strong, as can be testified to by any Virginia orchardist who has sprayed with Pyrox. With a high pressure barrel pump or power spray, we recommend using Pyrox one pound to seven or eight gallons of water, depending on the pressure. This is only six ad a quarter to seven pounds to fifty gallons of water. If this dilution had not proved strong enough for the control of bitter rot and the secnod brood of codling moth we would surely have heard of it long ago.

On the other hand, Pyrox used at this strength, and even at a weaker dilution under favorable conditions as regards the pressure and the fineness of the spray, has proved thoroughly effective. It is therefore very clearly evidet that the statement on which Prof. Starcher bases his conclusions is not based on facts. In short, hundreds of Virginia orchardists are using six to eight pounds of Pyrox to do the work for which he recommends fourteen pounds of his home-made Bordeaux and arsenate of lead mixture, and the results from the use of Pyrox at this rate have been uniformly satisfactory and we could even say that the results have been more satisfactory than from the use of Bordeaux.

Cost of Spray Chemicals

Prof. Starcher has shown that the material cost for his mixture for making fifty gallons of spray solution is $1.40. At the rate of one pound to eight gallons of water, or 6¼ pounds to fifty gallons of water, and at 12 2-3 cents per pound, which is the cost of Pyrox in the 300-pound barrels, the total cost of Pyrox for fifty gallons of spray is 79 cents. Or 6¼ pounds at 13½ cents, which is the cost in 100-pound kegs, would equal 84 cents per fifty gallons of spray solution. Now, the Pyrox spray is ready to use and simply requires to be mixed up with water, which every orchardist will admit means a considerable saving in time and labor. The cost of $1.40 per fifty gallons of spray, which Prof. Starcher has figured for the Bordeaux and arsenate of lead mixture, does not include the cost of the time and labor for making this material. It will therefore be very obvious that the difference of 56 cents to 61 cents per fifty gallons of spray in favor of Pyrox, as shown above, does not represent the entire difference, for the labor of making the spray is a considerable item.

Our conclusion would be that, even if a grower were able to make a satisfactory Bordeaux, and liked it, he would not be willing to pay 56 cents to 61 cents per fifty gallons of spray for the privilege of making his own Bordeaux. Nor does this tell the whole story.

Use Finest Spray Nozzle

Not only is Pyrox stronger, pound for pound, and as shown above it would appear to be twice as strong as the home-made Bordeaux and arsenate of lead mixture, but gallon for gallon of spray solution, it is a superior fungicide for the control of bitter rot and other serious fungous diseases, and it is more economical to use, even if Pyrox cost more per gallon of spray solution. This is due both to its superior fungicidal value and to its mechanical condition. It isn't how much spray you use, but how the spray is put on. A bushel of sand spread out on your barn floor will cover a larger area more thoroughly than a bushel of gravel. The same principle holds in applying a spray material, and a spray that is smooth and fine, so that it will go through the finest spray nozzle and be applied in a fog-like mist, will envelop every part and give more thorough protection with a less amount of material.

We believe that the common practice in spraying with Bordeaux is to use a spray nozzle with a hole in the disc measuring 5-64 of an inch. With Pyrox it is possible to use a disc with a hole half this size and we recommend always with good pressure the use of the disc the whole in which measures 5-128 of an inch. According to the Arkansas Experiment Station Bulletin No. 114, this means that while with the larger opening 3¾ quarts per minute would be applied at 150 pounds pressure, with the smaller opening which we recommend for Pyrox 1½ quarts per minute would be applied under the same pressure. The result is that the Pyrox solution applied under these conditions would go more than twice as far as the Bordeaux and arsenate of lead soltuion applied with the disc which it is necessary to use, because it will not go through the finer nozzle without clogging. The example of the bushel of sand and the bushel of gravel will show you why this smaller quantity of Pyrox will cover the surface more thoroughly than the larger quantity of Bordeaux which, because of its being more or less coarse and uneven in its mechanical condition, must be applied with a coarser nozzle and in a coarser spray.

Bordeaux is Guesswork

We have ever disputed the fact that Bordeaux properly made is a good fungicide and for this purpose is vastly superior to lime sulphur. The fact remains, however, that no matter how careful or intelligent the farmer may be, the making of Bordeaux is guesswork, for the farmer has no way of determining the purity or chemical composition of the chemicals that he buys to make Bordeaux. On the other hand, the most vital factor in the making of Pyrox is our chemical laboratory, where tests are being constantly made by expert chemists so that the result is a uniform and high-grade product chemically combined to get the greatest possible effectiveness.

Sticking Quality

Another factor which Prof. Starcher has not mentioned, but which has a great bearing on the result, is the sticking quality. It needs no proof to show that a material which will stick on in spite of rains will be more lasting in its effect.

In conclusion, we wish to say that we have never experienced any great difficulty in selling Pyrox under the old conditions with bluestone at its former low price, and with bluestone at 30 cents per pound it is impossible to figure in any practical way to show that fifty gallons of spray solution of home-made Bordeaux-arsenate of lead mixture will cost less than fitfy gallons of spray solution with Pyrox. In fact, our figures above and the figures showing the cost of the material given by Prof. Starcher will show that with bluestone at 30 cents per pound Pyrox cost 21 cents per pound and still be as cheap per tank of spray as the Bordeaux-lead mixture. This is saying nothing of the superior value of Pyrox as a fungicide, of the fact that it will go farther and do more thorough work, or of the fact that it will stick on in spite of rains and give more lasting protection.

ADHESO AND WHY IT IS SUPERIOR

Ralph R. Adams, General Manager, Ansbacher Insecticide Co.

A manufacturer must make a spray material far better than it is possible for a grower to make it himself, or that manufacturer will go out of business. It may be possible to fool a grower once, but not twice, for he can tell the value of a material by the results he gets, and there are not enough growers i nthe country to keep a manufacturer in business if he can only sell each grower once.

When you see the sale of a brand of spray material falling off, you know it is not giving the proper results, that the growers have tried it and found it wanting. Again, when you see another brand being used by more and more growers each year you know it must be a good material.

The final vote as to its value is with the growers of the country. With them lies success or failure for the manufacturer.

Home-made Spray Unsafe

Have you ever dug up old bulletins in regard to making home-made spray chemicals and found directions for making arsenate of lead? If you are one of the unfortunates who have made some under those directions, you saw your crop burn, wither, and die.

Since then you have been able to buy arsenate of lead that gave the good results you had hoped to, but did not, get by the so-called economy of making a home-made preparation. You then realized that it was possible for a manufacturer to produce a material far superior to anything you could make yourself from any formula given you.

The same situation has for many years confronted the grower in regard to home-made Bordeaux and arsenate of lead combined as compared with Adheso.

It is human nature that when a man makes up his own spray chemicals, and the result is burning or russeting, that he keeps it to himself, for no one goes around advertising his own mistake. But let him buy a commercial spray material and get what he does not consider the best results, and you can hear from Richmond to San Francisco.

Bordeaux Burns and Russets

In the years I have been engaged in the spray chemical business, and before that in orchard practice, I have never found an orchardist who did not at one time or another have trouble with home-made Bordeaux. One mixture would cause no damage, and another would result in burning or russeting.

It is because of these frequent bad results and consequent damage to the crop that lime sulphur came into use as a summer spray, although it is stated by the United States Department of Agriculture that Bordeaux should be used to control apple blotch

(Continued on page 714)

A Sluggish Liver

CAUSES LOTS OF TROUBLE.

Unless the liver is working properly you may look forward to a great many troubles arising, such as constipation, severe headaches, bilious headaches, sick headaches, jaundice, sick stomach, etc.

Mrs. J. Shellsworth, 227 Albemarle St., Halifax, N.S., writes: "I take pleasure in writing you concerning the great value I have received by using your Milburn's Laxa-Liver Pills for a sluggish liver. When my liver got bad I would have severe headaches, but after using a couple of vials of your pills I have not been bothered with the headaches any more."

Milburn's Laxa-Liver Pills are, without a doubt, the best liver regulator on the market to-day. Twenty-five years of a reputation should surely prove this.

Milburn's Laxa-Liver Pills are 25 cents per vial, 5 vials for $1.00; for sale at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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Made of our famous Oil-Tanned Skowhegan waterproof leather; they have waterproof sole-leather outsoles and solid insoles. The soles, too, are attached by an improved clincher fastener process. They are staunch, light-weight working shoes for spring, summer and fall. Your dealer will likely have them; if not, write us, giving his name and address.

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As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

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Advertise in The Maritime Farmer.

NEW CHEAP INSECTICIDE

The potato bug is now so well distributed throughout the Maritime Provinces that every farmer is naturally interested in any improved method by which this pest may be killed.

Mr J. A. Neilson, of the Horticultural Department of the Manitoba Agricultural College, has carried on some very successful experiments this year with a new and cheap insecticide, the special value of which is partly derived from the fact that paris green is this year selling at about three or four times its ordinary price. The new preparation will also stick to the foliage better than does the paris green.

The name of the new preparation is Calcium Arsenate. The formula is as follows: Sodium Arsenate (dry powdered), 10 pounds; fresh stone lime, 6 pounds; water, 2 gallons.

Heat the water. In about 1½ gallons of it dissolve the sodium arsenate. With the other half gallon begin the slaking of the lime, which has been previously broken into small lumps with a hammer. When slaking is well under way pour in the dissolved sodium arsenate. Stir until all slaking has ceased, adding even more than the original amount of water if this should be necessary to prevent the lime from burning. The result is a thick paste. Of this paste 4 pounds is enough to add to a 40-gallon barrel of water, this being the right strength for spraying.

When the spraying is to be done the paste should be liquified in hot water; pour through a cloth strainer to take out any lumps that might clog the sprayer, and water down to the right strength, as indicated above.

As with paris green or any other arsenical poison, the mixture should be agitated as it is used so as to prevent settling.

Unlike paris green, calcium arsenate will not burn the foliage, neither will it wash off as easily as the paris green. It is cheaper also than arsenate of lead, which has been considerably favored during later years because of its non-burning characteristics. Purchased this year in 10-pound lots, the sodium arsenate costs about 17 cents per pound. On the basis of these figures, the spray costs 25 cents per barrel, which amount should cover two-thirds of an acre.

SUMMER PRUNING OF THE APPLE

Whether it is best to do anything extensive in the way of pruning apple trees in the summer is a question regarding which a great deal has been said and written. Both sides have been well represented. But so far as I have heard or seen, the majority who have expressed an opinion are not in favor of the practice.

While there are strong objections to the doing of a great deal of this kind of work when the trees are in full leaf, it seems to me that on a restricted scale summer pruning may be quite useful. Just how much to do must be determined by the condition of the trees. If pruning is needed to improve the form of the tops, it would better be deferred until late in the fall or early next spring. The only exception to this rule is where branches have been allowed to grow across, or to come in contact with each other. If the growth of wood has been excessive a part of it should be removed. And if the tops are dense it will be wise to thin them sufficiently to allow a pretty free circulation of air and to admit enough sunlight to properly color the fruit. All dead limbs and those which are seriously diseased should be removed without delay.

Where branches are taken off the cutting should be done close to the trunk, or to the larger limb to which the one to be removed is joined. This is important, because spurs, even if they are short, are liable to decay and cause serious injury to the tree. The cut should be as smooth as it can be made. As the bark is soft at this time of the year, care should be taken not to bruise it or separate it from the wood. If large branches are taken off it may be well to cover the wound on the tree with paint. Whether it will pay to do this where only small branches are removed is an open question. In practice, at least, successful fruit growers are not agreed. Judging from the results of my own experience, it is a matter of very little importance.

On small apple trees no extensive pruning should be done in the summer, or, in fact, at any other season. With the exception of rubbing off superfluous buds, all the work that such trees need in this line can be done with pruning shears and a sharp knife. But though only a little is required, this work should not be neglected. Neither should its purpose be overlooked. This is simply to prevent growth that would be worse than useless to the tree.—J. E. R.

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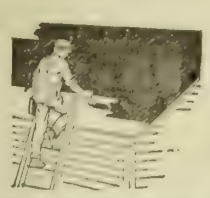
EVERJET ELASTIC PAINT



THEN there is Everjet Elastic Paint—the best carbon paint ever made. Everjet has saved many a dollar by keeping "ready roofings" in first class condition. It is elastic and expands or contracts to meet temperature changes. It never peels, scales or cracks. And as a roof paint Everjet stands alone. It has great covering capacity—therefore, it is not expensive to use. Absolutely waterproof—therefore, protects against leaks and weather. You should never be without Everjet.

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AMATITE Roofing is distinctive for two reasons—its bright, attractive, sparkling appearance and its great durability. It has wide fame, too, as the roofing that needs no paint. Its mineral surface is waterproof and fire-resisting. Amatite is made in rolls, each roll containing enough to cover 100 square feet with a 3 inch lap.

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CREONOID is the most effective lice destroyer and cow spray ever made. Spray your live stock with Creonoid and they will be happy and healthy. Creonoid makes care-free horses — cows that give a generous yield of milk — and clean, good-laying hens. A little Creonoid sprayed in the piggery helps make profitable porkers. Follow directions carefully.

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NOW those fence posts of yours would not have rotted if you had used Grade-One Creosote Oil. It has been proved that this wonderful wood preservative will keep fence posts and timbers rot-proof for twenty years. Don't think of putting wood into the ground without treating it with Grade-One Creosote Oil. It penetrates farther into the wood than any other preservative. It also lasts longer. And it is so easily applied. Use it wherever wood is exposed to dampness, earth or weather. It saves you money.

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LIVE STOCK.

CALF REARING WITH MILK AND SUBSTITUTES

To make calf rearing for beef purposes pay for the milk at the rate it brings in the sweet-milk trade, butter making, or cheese factory, several calves must be reared per annum by each cow. There are many ways to this end, and endless variations of practice to suit situations and abundance or scarcity of labor.

The nearest approach to nature's original device is to put two calves to suck simultaneously from a cow for three or four months, and when these calves are started eating some ground oats mixed with a little linseed meal they may be weaned off the cow and continued in growth by hand feeding, always bearing in mind that they have access to good clean water. Another pair of young calves can be put to suck as their predecessors had done. Weaning such calves at three months, five calves can be reared each year by any good milking cow. One calf will suffice for the cow finishing up her lactation. The writer successfully reared ten calves in one season with two cows that were hard to milk. The period which required the closest attention was the weaning of the calves from the cow, but the sympathies of the children about the farm ought to be enlisted in this work and a very useful course in agricultural education will be achieved. Train the calves to eat from the hand the crushed grain, or chop and feed them with a substitute for milk from a pail of a mixture to be referred to later. There is difficulty sometimes experienced in getting the cows to take the second or third batch of calves. No set plan can be detailed to induce every cow to accept strange calves, but persistence, directed by brains, always will succeed. The future progress of these calves depends greatly on careful attention and good feeding to keep the baby beef on. They must not be neglected and allowed to shrink back.

Calves can be successfully reared on various substitutes for milk, but for the first month of their lives it is courting disaster to have much substitute of any sort. It is especially important for the calf that it get the first or colostrum milk of the dam. The milk is a powerful laxative, and is effective in removing the fecal matter from the alimentary canal, and in addition serves as a tonic. Some approve the taking away of the calf immediately it is dropped, but always give it the dam's milk. This more easily reconciles the cow and teaches the calf more readily to drink. If the calf is at all weakly it will be found advisable to let it suck for a few days, up to the ninth milking, when the cow's milk will be fit for use. This will also ease the cow's udder, if there is a tendency to inflammation, better than can be done by hand.

After the calf is a month old more liberty of ration is permissible, and much cheaper articles can be given safely in place of a portion of the natural milk diet. The secret of success lies in gradually working in the substitute in place of the good milk and inducing the calves to take up the new ration.

Linseed meal—not oil cake meal that has the greater percentage of oil extracted—should be scalded with boiling water and allowed to cool and turn to a jelly, will be found a good first substitute along with milk; about half a pound per day—that half pound dry meal made into jelly.

Where no skim or separated milk is available for the older calves a substitute or equivalent is found in mixtures of oleaginous meals cooked in hot water. Manufacturers have devoted much care and study to the invention of suitable substitutes, and while none of

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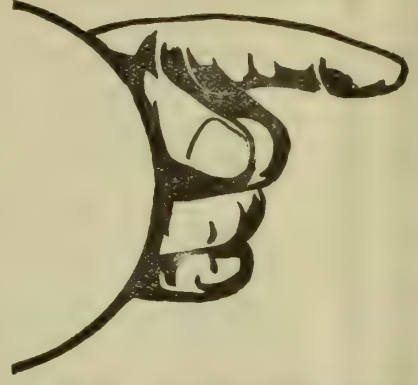

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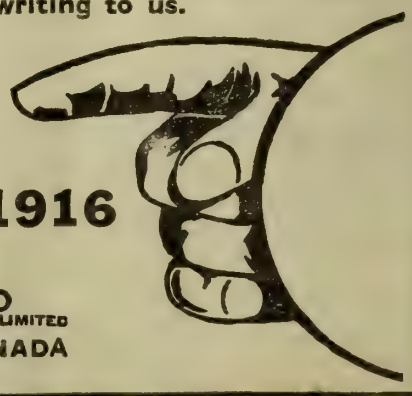
THIS SALE ENDS AUGUST 15th, 1916



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Clean to handle. Sold by all Druggists, Grocers and General Stores.

these is equal to good milk wonderfully successful results can be obtained if carefully handled. Cod liver oil is the best substitute known to the writer, and calves have been successfully reared on that almost alone as an extra to milk; about 2 to 3 ounces to the gallon of separated milk is the quantity to start with. The price of cod liver oil today may preclude its profitable use.

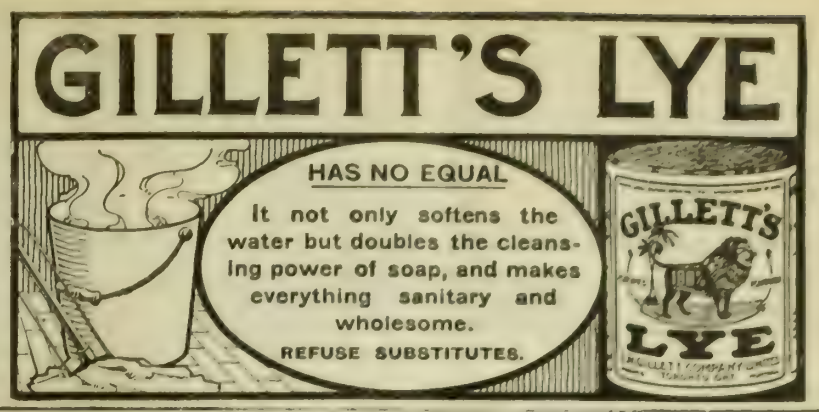
A good calf meal can be made at home by mixing together two parts by weight of finely ground oatmeal, two parts cornmeal, and one part pure ground linseed meal. Practically as good results have been attained with this mixture as with any other substitutes or equivalents. A cream substitute should be pure, rich in fat, and readily digestible; and cod liver oil is the nearest approach to what is wanted. But a milk substitute needs a wider basis, and the above mixture of finely ground oatmeal, cornmeal, and flaxseed meal is as good as has been got.

It is always a point of difficulty to beginners to know what quantity of meal to dissolve in making the gruel. After some experience the individual progress of the calf will show if it requires less or more, and this knowledge can scarcely be taught by pen. But it may be some guide to repeat: Whole milk, sweet and warm, for the first month of calfhood, from 4 quarts at birth to 6 quarts per day at one month old; substitutes slowly and gradually take place as time flies. Quantity of meal to make into gruel, about one pint, or about half a pound by weight, for each calf per day, made finally into 6 quarts of warm gruel. At first the meal should be gently boiled or steeped in boiling water and left for six or eight hours to jelly, then reduced to thin gruel with warm water. During the transition period, when milk is in use, the quantity of gruel will not of course be 6 quarts. That is the daily allowance of milk or milk and substitute, or substitute. Even at three months two gallons per day, fed twice, is ample, and need not be increased. After the calf is from 3 to 4 months old a dry meal feed, starting with half a pound a day to two pounds when a year old. There are many cakes specially made for calves which are successfully used, but cotton cake nor cotton seed meal should not on any account be given to calves. Much harm has been done to calves by this meal or cake, which is valuable enough for older stock. Plenty of sunlight and ample ventilation are necessary. Calves can stand quite a bit of exposure to cold if well fed.—Ottawa Valley Journal.

GIVE PURE AIR

Some people are inclined to think a hog can get along anywhere and anyhow, and often no thought is taken for his comfort. A hog has no more sentiment than a hen, but he will thrive and grow, or suffer and squeal according to the way he is treated. Draughts are prime promoters of colds which develop into pneumonia and what is known as swine fever. Too many persons who attempt to raise hogs pay no attention to the ventilation, or if they attempt to ventilate or all they do little more than leave a few boards off around the bottom, through which the cold air comes, but they provide no way for it to get out.

It is important that the bottom boards should be tight, as also between the pens. Ample ventilation should be provided from above and not by underneath draughts. Who has not seen hogs piled upon each other in cold weather, shivering and fighting to get into a warm place? Under these conditions it is impossible for a hog to put on flesh, and there are nine chances in ten that he will take cold, which may develop into serious lung trouble. Pig house floors must be kept dry, whether of cement or plank. Clean, dry bedding is always appreciated by hogs in the fall or in winter. Their natural instincts are for cozy quarters which may be accepted as suitable for them. After you begin the fattening process it is wise to feed all they will eat with a relish. As a rule, the shorter the period of fattening the larger the profits, and the meat is better flavored for home use. With animals that will multiply as rapidly as pigs, it is a shame that men will waste their time, money, etc., on scrub hogs with no trace of ancestry or hope of posterity. Yet this is what a large number of farmers are doing, and still they wonder why feeding hogs is not paying them substantial profits. It is not wise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HAS NO EQUAL
It not only softens the water but doubles the cleansing power of soap, and makes everything sanitary and wholesome.
REFUSE SUBSTITUTES.
GILLETT'S
LYE

to sell good, mature brood sows and replace them with young ones, as it will produce a weak strain. In selecting a brood sow watch them at feeding time. The thriftiest and fattest always get to the trough first, and these are the ones to buy.—N. E. Homestead.

WHEN HOGS SHOULD BE RUNG

The ringing of hogs is a much more common practice in older countries than it is in the Maritime Provinces. Here we have an abundance of range for hogs and the rooting up of a pasture is not considered serious. As our present extensive methods are gradually replaced by more intensive methods we will find that a good crop of alfalfa or other good pasture is too valuable to be torn up by the snouts of hogs. The little copper wire staple so commonly used in the east and south is the best preventive against the rooting habit in hogs.

A hog on pasture should certainly have rings in his nose, especially if a number of hogs are kept on a limited area. One case where it is decidedly necessary is on alfalfa pasture, if the greatest use is to be obtained from this pasture. Many hogs, too, have a habit of rooting in the pen. This is most common among brood sows at time of heat. In cases where a dirt floor is used, or where planks and troughs can be rooted up, the ringing of pigs is advisable. The operation is simple, cheap, and effective. It is almost the only way that a notorious hog can be taught to behave.

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The Cheapest Separator in the Long Run

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So perfect is the design of the Magnet skimmer that it will skim milk hot or cold. No wobbling—the balance and weight of the Magnet allows proper skimming even when the machine is not level. And the double support of the bowl—running at top and bottom on bronze cushion bearings—ensures every drop of cream being taken cleanly and quickly.

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LASTS 50 YEARS

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No awkward discs in the Magnet Skimmer. It's different in design and better for skimming right down to the last drop. Open, and so never chokes up. Impossible to get clogged with dirt.

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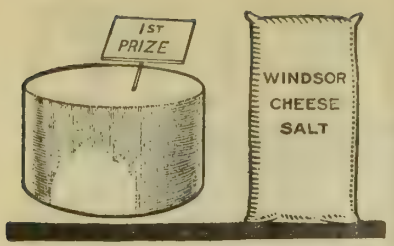

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DEPARTMENT OF AGRICULTURE
PROVINCE OF NOVA SCOTIA

Truro, N. S., July 24, 1916.

Editor Maritime Farmer:

I enclose an article which I clipped out of the Creamery Journal of Iowa. I think possibly this will be of interest to many of your readers.

W. A. MacKAY,
Dairy Superintendent, N. S.

BLAZERS OF THE TRAIL

Why is the butter maker asked to do everything?

This is the question which is asked on every side whenever a bunch of butter makers get together, whether the occasion be a national or state convention or merely a gathering of a small group

Upon first thought it does appear to be unjust that the man who works hard all day in a creamery should be asked to go outside his plant and spend his spare time trying to improve the conditions of his patrons. In most cases he is working for a salary and has no share in the profits of the plant. Why, then, should he work overtime trying to bring about conditions which will mean more money to the patron, but will not add a dime to the butter maker's pocketbook?

"Give us quality." "Make your butter of uniform grade," demands the butter merchant. If the butter maker knows his business he is utilizing the best methods in making his butter, and it is the condition of the raw material which is causing the lack of uniformity and the poor quality. This means that he is called upon to plead with the patrons to take better care of their cream and bring it to him oftener in order that he may make better butter and draw a higher price in the market. Where the creamery is run on a co-operative basis, or where a premium is offered for good cream, this means money in the patrons' pocketbooks; the butter maker does not profit a cent, yet he is called upon to plead and argue and make wild promises in order to turn more money into the pockets of the very men who howl about what the butter maker asks.

"Help organize cow testing associations, so that your patrons may get more milk and make more money from their herds," is the cry of the agricultural colleges and dairy papers. Why? It doesn't mean any more money for the butter maker, perhaps; only more work.

"Beautify your creamery grounds; paint up; clean up," is another group's plea. Why? It may mean that the improved appearance of the creamery will increase its value, but is that putting any more money in the butter maker's pocket?

"Talk dairying to the grain farmer." "Get in line with the educational work." "Learn to detect leaks that are losing money for the creamery," and dozens of other similar propositions are asking the assistance of the butter maker. Why? Does it mean more money for him?

Why is the butter maker asked to do everything?

Take this question of an employee of a large corporation, put him in the place of the butter maker, tell him he is expected to do all these things for his employers without any apparent reward in sight, and what is the result? Instead of uttering a whine of despair and complaining that he is given everything to do and gets nothig for doing it, he will straighten his shoulders and go at his task with new real. Why? Because he feels that he is needed, that he is necessary to his firm's success—that he is doing a man's work. His business training has taught him that he can get no more out of his work than what he puts into it, and that there is no royal road to success. His own efforts must earn his reward, and while his employers are apparently allowing his work to go unappreciated he knows that sooner or later they must recognize his merits or some other firm will.

The butter maker who is not content with standing still realizes this also. He is going after better cream, he is helping to organize cow-testing associations, he is beautifying his creamery and the grounds around the creamery, he is boosting dairying and trying to get more raw material, he is looking after the little details in his plant and attempting to improve his own methods. Why? Because he knows that while he may be working for a bunch of directors who will take all they can get and ask for more without being willing to pay for what they get, sooner or later he is going to take a big step up. Either his employers are going to have to "come clean" with more money or some other creamery is going to take him away from them.

Times are changing. Where but a short time ago it was customary for the butter maker to stay for life at just the salary he received when he started working directors are beginning to realize the fact that it's the dollar that talks, and if they are going to get every penny out of their creamery which it is capable of producing they have no place for a "cheap" man, for they are finding out that he is liable to be cheap in more than one sense of the word. The time is not far distant when butter making will be appreciated as being the highly specialized technical profession which it has become, and the men who are vitally interested in the business will learn that a good butter maker is worth a salary which is something more than an insult.

When the time comes when this fact is more generally appreciated some of those butter makers who are asking "What's the use?" will be wondering why they do not seem to be getting any place while the young fellow over in the neighboring community is going further every year. If they will stop and notice they will find that these are the men who didn't ask "Why is the butter maker asked to do everything?" but who went ahead and blazed the trail to better dairying, who saw that their own future rested on their ability to make good even when their efforts apparently put money in their patrons' pockets and meant nothing but extra work for the butter maker. They were working for better positions and more money in the future, it is true, but they were also working because they took pride in their work. They are the kind of men who would succeed in any business, for, no matter what their present salary may be, in a broad sense of the phrase they are "high-priced" men.

BUTTERMILK AS A BEVERAGE

The use of buttermilk or culture buttermilk as a beverage is increasing. This increase no doubt has been stimulated by the writings of the noted Russian scientist. Dr. Metchnikoff. In his book, "The Prolongation of Life," he states that the use of fermented milk in combating autointoxication—toxic fermentations in the intestines—is based on the priciple of lactic acid bacteria, and that the products of their growth prevent or retard the growth of the toxin-producing germs in the intestinal tract.

Many physicians have prescribed buttermilk for medicinal purposes. It is believed that it may be used successfully as a remedy for kidney troubles. Buttermilk has, in addition to being a pleasant beverage, valuable food qualities. The composition of average buttermilk is: water, 90.50; fat, 0.20; casein and albumin, 3.30; milk sugar, 5.30; ash 0.70 per cent. It will be seen that buttermilk has practiccally the same food value as skim milk.

One of the first fermented drinks known to European peoples was kefir. This beverage of fermented milk had been used by the peoples of southern Russian, Turkey, and the Balkan countries for many centuries. There are

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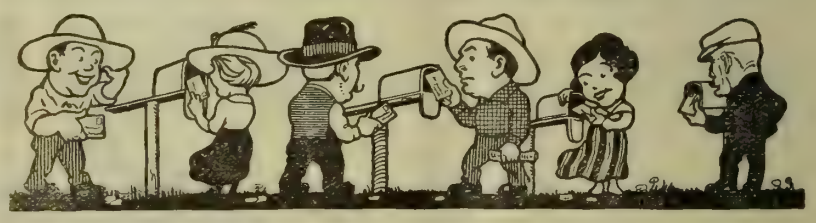

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Summer travel is now at its height and intending tourists are reminded of the many attractive features of a trip over the Grand Trunk and Grand Trunk Pacific Railways,—of all perhaps that westbound through Prince Rupert to Alaska is the finest.

This service has been further improved by the inauguration of faster schedules between Prince Rupert and Skagway.

The steamer leaving Prince Rupert at 12 noon Wednesday will hereafter arrive at Skagway at 8 a.m. Friday. Southbound steamer will leave Skagway at 7 p.m. Saturday.

This service will enable passengers to make trips through to White Horse and return while vessel is in port.

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no records and but few traditions of the origin of the fermented milks they used. It is probable that their preparation and use developed gradually by cumulative experience. This drink was first made in the Caucasus Mountains from milk of cows, sheep, and goats. Different tribes made it under different names, and all the names are said to be derived from a root signifying a pleasant taste.

In Chicago there is quite a large business done by a Jewish creamery selling thick sour cream to be used in the place of butter for spreading over bread. Spreading bread with sour cream is general among Jewish people in other cities. The sale of culture butter has become quite a business with some milk dealers. It is said that the saloons do an etxensive business selling culture buttermilk to customers at the same price as beer. I know of one firm that has worked up a considerable business by selling what it terms "creamed buttermilk"—that is, buttermilk fortified by having some cream mixed with it.

Originally the term "buttermilk" meant the by-product of butter making, or the portion of cream that remained after the fat had been churned out of the cream. As cream normally is churned sour, the casein of the buttermilk is in a precipitated and finely divided condition. The casein remains suspended in the liquid for several hours, but gradually settles to the bottom, leaving a transparent whey on top. Occasional stirring keeps the buttermilk in its homogeneous milky condition. When it comes from fresh and properly ripened cream it is a refreshing, delicious drink. The old custom of obtaining butter by churning sour milk still prevails on a large scale in the American south. There buttermilk is the by-product of churning milk, and it is a common and popular drink in the southern homes and public eating places.

Lactic acid-producing bacteria, which cause milk and cream to sour, produce not more than 1 per cent of acid. Metchnikoff's bacillus, or bacillus Bulgaricus, which is used quite extensively in the preparation of culture buttermilk, is capable of producing as much as 3 per cent lactic acid if allowed to stand long enough. Bacillus Bulgaricus produces a viscous curd which will not settle to the bottom. In preparing a mother starter, which can be used from time to time for souring additional lots of milk, take a quart of skim milk, or whole milk, boil it or pasteurize it to destroy the bacteria present, cool back to a temperature of 70 degrees F., and add to this a pulverized lactic acid tablet; cover, and let stand from 12 to 24 hours. As soon as the milk is coagulated it is ready for use, and should be stirred before serving.

In preparing culture buttermilk from day to day, add from 1 to 2 per cent of the soured buttermilk of the previous day's make. If Bacillus Bulgaricus is used the temperature of milk to be soured should be 100 degrees F. instead of 70 degrees F. Some follow the practice of souring a lot of milk with lactic acid tablets and an equal amount with Bulgarian tablets. After the two lots are soured they are placed in a churn and thoroughly mixed by churning to a smooth consistency.

In preparing buttermilk some add a little whole milk or cream, so that particles of fat will be seen floating around on the surface when churned, thereby having the appearance of the old-style buttermilk. One gallon of whole milk to 20 gallons of skim milk will give a good combination when soured and churned. Tablets can be purchased from dairy supply houses.

Bacillus Bulgaricus is a lover of high temperatures and will persist in the digestive tract much longer than the common lactic acid germ. Bulgarian buttermilk will stand heat and long age without wheying off, but the flavor of Bulgarian buttermilk is sharp and astringent or coarse. The flavor of the lactic acid culture is pleasant. By combining the two cultures a fine-flavored beverage which does not whey off is produced.—G. L. McKay, in the Breeders' Gazette.

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Everyone nowadays appreciates the necessity of silage for milch cows, beef cattle, or sheep, if they are to be profitably fed. No other feed equals it. No other feed is so economical. You want a silo and need one. You can not save anything by delaying your purchase. Act at once so that next winter you will be prepared to get the most profit from your livestock. The silo will pay for itself before spring. Order now an

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For the **Human Body** —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.

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THE HORSE

BREEDING HORSES TO COLOR

The ambition of the breeder is to produce animals of a certain character at will. Out of all the good herds he gets a few which come up to his ideal of perfection. The object of his work is to make all his young stuff uniform and of high grade. The breeders of Hereford cattle can foretell the color and marking of all their animals, as can the breeders of AberdeenAngus. These breeds of cattle breed uniform to color because all other color tendencies have been bred out or eliminated.

The behavior of coat colors in horses is instructive. There is not a blending, but a segregation of colors. So complete is the segregation that it is possible to breed horses of any desired color. This has not been done on any large scale except with the Suffolk. There are over 12,000 Suffolks registered, and all are chestnuts. There can be no such a thing as a gray, bay, or black Suffolk. This is so because the foundation stock from which the Suffolk sprang in 1768 was chestnut. The horse of chestnut coat color has lost the physical material that can produce gray, bay, and black. Chestnut horses breed true for chestnut because they carry no property for any other coat color. To establish a family of chestnut horses in a breed is easy; all that is required is to make chestnut matings.

There is a belief among some horse breeders that a chestnut horse whose ancestry for several generations has been chestnut is more prepotent than one whose parents are of other colors. Often in mating gray, bay, and black horses indiscriminately the product is chestnut. Horses of such origin are just as strong in producing chestnut color as horses of pure chestnut ancestry. It seems that so long as there is present in the make-up of a horse the physical basis for other colors chestnut cannot appear. It is held in check; it is not allowed to express itself. This is because it is a weaker color than dun, roan, gray, bay, and black.

There should be no confusion when chestnut is designated the weaker color. This tsatement is true from the standpoint of heredity only. It does not mean that the horse is weak or inferior. The strongest and best horses may have a chestnut color. To breed chestnut horses all that is required is to have the sire and dam chestnut. There is no necessity of inquiring about the ancestry of the parents. When horses possess chestnut color they will breed true for it.

It is somewhat more difficult to establish a family of black horses. The starting point is to select black individuals. Some of these will be pure for black color and some will have suppressed a basis for chestnut color. There is no way to find out which ones may carry the latent element of chestnut except by breeding. Those which throw chestnuts are not pure for black and should be cast off.

Brown is genetically a bay, and can for breeding purposes be classed with it. Bay is stronger than black and chestnut. It breeds true except for the two weaker colors. A bay horse can carry the physical elements for bay, black, and chestnut. I have a tabulation of 3,712 bay matings. The result of these matings are: bay foals 3,131, black foals 107, chestnut foals 474. That is, bay coat color will breed true in 84 per cent of the foals produced. The breeding test will reveal the individuals which carry bay only. Selecting these will soon give the breeder a pure family of bays. The test for a pure bay stallion is easier to make than for the mare. A stallion mated to black and chestnut mares that produce nothing but bay foals can be counted as pure for bay. The Cleveland Bay is the only breed of horses whose color must be bay.

Gray is stronger than bay. To secure a family of gray horses it will be necessary to eliminate those individuals of gray color that carry latent the elements for any or all the three weaker colors. A gray stallion used on solid colored mares which produce all grays can be considered pure for gray.

It is not desirable that horses shall be bred true to color. The color does not necessarily carry with it either good or bad qualities. It is transmitted independently of size, strength, speed, endurance, style, and beauty. There is a possibility that in some individuals it may be linked in transmission with other qualities. However, the link has not as yet been proved. A worthless horse may have the best of color, while the best horse is liable to have the ugliest shade.

The law of color inheritance is valuable in showing the method by which necessary traits can be secured and bred true in domestic animals. Certainty in breeding can be accomplished only when pure characters are being mated in the breeding stock. Breeding stock is likely to have many, many traits which the operator will want pure in addition to coat color.—W. S. Anderson, Kentucky Experiment Station, in Breeders' Gazette.

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Aosorbine and Absorbine, Jr., are made in Canada.

HORSE COMFORT AT NIGHT

Horses cannot work and still keep comfortable in hot weather, but there is no reason why they cannot be made comfortable nights. If they sweat the whole night long in hot, stuffy stables they are not fit for the hardest work. Continual sweating reduces vitality and often throws them off feed to such an extent that they are weak and lifeless at work.

The common plan of turning the horses out of the stable after supper is just the thing needed at this time of year. After the grass is well hardened by the summer heat night pasturing does not reduce working capacity. If there is no pasture handy for the horses it is better to turn them in the barn lot with a tank full of water and a rack of hay than leave them confined in a hot stable. The open night air is cool enough to stop sweating, and the horse is much refreshed and invigorated by it. Even the fact that they get water to drink at night would be worth all the trouble of turning horses out. Most farm horses are never watered after supper if they stay in the stable. Any working horse needs water then especially in summer. It is impossible for a thirsty horse to gauge the amount of water his system requires when he goes to the trough from a hot day's work. After filling up on dry hay and grain he is thirsty again. If there is no water until morning the system may run injuriously low in the supply of fluids. In well-regulated city stables horses are watered at night after eating their hay. The freedom of a barn lot or pasture with water at will all night is still better. Horses so handled are not thirsty in the morning, and sometimes do not even care to drink after breakfast. They go to work feeling fresh and rested, and are much less apt to become overheated than horses which pass uncomfortable nights.

Careful attention to the health of horses in hot weather, and watching for the first danger signals in the field, enable some of the greatest hustlers with farm operations to get a surprising amount of harvest work done with each horse, and without ever killing one from heat. It pays to be careful and to anticipate hot weather trouble so as to prevent it. An overheated horse is a poor piece of property, and the overheating can be avoided.

Getting to town and market is becoming more a matter of time than distance, and the automobile cuts time wonderfully. It also adds to the pleasure of life and the social benefit of the farmer.

This School Girl Had Bad Fainting Spells

Was Weak and Run Down, But Dr. Chase's Nerve Food Made Complete Cure.

The most critical time in a girl's life comes during the school age, when she is impelled by rivalry to put forth her best efforts in studying for examinations. At the time she should have healthful outdoor exercise and abundance of fresh air to keep the blood pure and rich, she is confined by her studies. Is it any wonder that she becomes run down in health and suffers from headaches, indigestion, loss of appetite and spells of weakness or fainting?

The case described in this letter is a good illustration, and you can read here the splendid results of using Dr. Chase's Nerve Food to help through this critical period.

Mrs. H. Houston, Highland Grove, Ont., writes:

"While attending school my daughter became weak and very much run down. She was frequently troubled with bad fainting spells, and nothing we tried seemed to do her any good. We were advised to try Dr. Chase's Nerve Food, and did so with most satisfactory results. I am pleased to tell you that after using five boxes of the Nerve Food she was completely cured, and has no return of the fainting spells."

This statement is certified to by Mr. Hamilton Houston, Justice of the Peace.

The reason Dr. Chase's Nerve Food is so effective in cases of this kind is because of its extraordinary blood forming influence. By creating an abundance of rich red blood it strengthens the action of the heart, revitalizes the exhausted nerves and builds up the system in every way.

The appetite is restored, digestion improves, you rest and sleep well, and the new vigor and energy is felt in every organ of the human body. Dr. Chase's Nerve Food is doing wonders for men, women and children whose systems have become weak and run down. 50 cents a box, 6 for $2.50. All dealers, or Edmanson, Bates & Co., Limited, Toronto.

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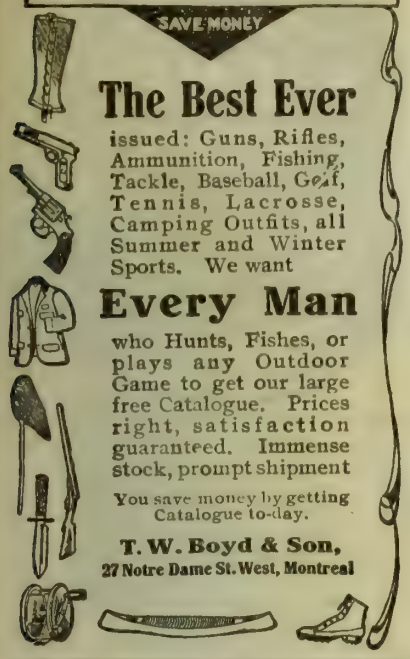

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LOSE TWO!

What excuse or reason have you for waiting?

Health? Your health is all right and certainly will show marked improvement under the stimulating effects of interesting work.

Want to look around?

But this year is one of the most valuable that you have allotted to you.

Great prosperity—great business activity is rapidly approaching. Will you get in on the crest of the wave that carries you swiftly to Success? Or will you wait and take it at its ebb in the reaction which inevitably follows?

This is a year filled with opportunity for you. Start.

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THE FALL TERM
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Booklet descriptive of our courses of study and rates of tuition will be sent on application. Address

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No Summer Vacation

Will be given this year, but we will do our "bit" by fitting young men and women for the work that is waiting for them.

Students can enter at any time.

Send for catalogue.

THE ST. JOHN BUSINESS COLLEGE

S. KERR, Principal

POULTRY

CO-OPERATIVE FATTENING OF CHICKENS

The announcement is made by the Poultry Department of Manitoba Agricultural College that chickens will this fall again be fattened there on the co operative plan. Last year upwards of seventy farmers, located all over Manitoba, shipped their chickens to the college to be fattened, the shipments aggregating 1567 chickens, and selling, when finished for $1,559, or 99½ cents apiece. The birds were sold with heads and feet on and were undrawn. The following prices were received: N. 1 birds, highest price, 25 cents; lowest price, 20 cents. No. 2 birds, highest price, 18 cents; lowest price, 16 cents.

About 75 per cent of the carcases graded No. 1. Had it not been for 75 old hens shipped in by the consignors the average price would have been higher.

The best gains were made last year with chickens weighing about four pounds each. Fifty Buff Orpingtons sent by Mrs. Gill, Rathwell, gained 81 pounds in the three weeks; even this rate of gain was beaten by many small lots.

The breeds largely received were Plymouth Rocks, Wyandotts, Orpingtons, and Rhode Island Reds. The Barred Rocks were probably the most satisfactory; they ate well during the whole period, made good gains, and graded the largest percentage of No 1 carcases. Some Leghorns were sent in, but they were unsatisfactory from a feeder's standpoint.

The carcases were sold to the produce handling stores of Winnipeg.

This year chickens of the heavy breeds will again be received, also turkeys. Positively no Leghorns, old hens, ducks, or geese will be taken. Consignments of chickens may be shipped from early September, provided they average three pounds or over per bird. Turkeys will be received any time after October 1st. There should be a good demand for chickens this year, with prices higher than one year ago, and there is a shortage of turkeys. Farmers, therefore, are urged to keep their young stock growing right along during the summer.

SEPARATING THE SEXES OF FOWLS

It has been proved by more than one experiment that hens lay more eggs when separated from male birds than they do if kept constantly mated. Pullets mature in better form if separated from cockerels as soon as the sexes can be determined with certainty. It is better to sell the cockerels for market purposes than to keep them until older, and only such as are to be reserved for breeders should be kept, and these should be shut by themselves. Cockerels that are kept separated from hens and pullets until they are to be used are better as breeders. Eggs from hens kept away from male birds keep longer. Male birds kept confined are better off than if allowed to run at large. All this shows that it is a profitable practice to separate the sexes during all the time that hatching is not going on. It makes a little trouble to keep the male birds confined, but it pays in better conditions for the females, in earlier maturity, greater egg production, and larger profits.

CELERY CABBAGE FOR GREEN FEED

Have any of our Farmer readers ever tried celery cabbage for green feed for their poultry? About the 15th June the editor's little boy sowed a five-cent package of celery cabbage seed on a plot containing fifty square feet. It is now about 15 inches tall. It made a very thick stand and by judicious thinning it appears as if there will be enough to afford a bountiful supply of green feed for the flock of twenty hens for the remainder of the season and leave a good number of heads to hang up after the snow flies. We find celery cabbage does not wilt so readily as some other greens we have tried, as it is very juicy, fleshy, and brittle. It is first choice with our hens when fed with other varieties, and they are responding very well indeed. During the last month they have averaged about 17 eggs per day.

STORRS CONTEST NOTES

The 1,000 hens in the international egg-laying contest at Storrs, Connecticut, made a slight gain in production during the 35th week, ending July 2, whereas all signs pointed to a falling off in production. They laid a total of 4,212 eggs, which is 325 in excess of the yield for the corresponding week last year. Two pens of Leghorns belonging to P. G. Platt, of Wallingford, Pa., and Will Baron, of Bartle, England, tied for first place for the week with 59 eggs each. Dr. N. W. Sanborn's Buff Wyandotes, of Holden, Mass.; Elmwood Farm's Mottled Anconas, of Little Falls, N. Y.; and four pens of Leghorns owned by Branford Farm, of Croton, Conn.; Harry Williams, of Bridgeport, Conn.; James H. Lord, of Methuen, Mass.; and Abel Lathan, of Brierfield, England, all tied for second place with 55 eggs each. Four pens tied for third with a score of 54 eggs each.

"DOG DAYS"
the best time to buy a
DE LAVAL
SEPARATOR

THERE WAS NEVER BEFORE as good a time to buy a De Laval Cream Separator as right now.

THE "DOG DAYS" ARE AT hand when dairying is most difficult without a separator and when the increase in quantity and improvement in quality of cream and butter are greatest through the use of a good separator.

THEN THERE IS THE GREAT saving of time and labor, which counts for more in summer than at any other season and often alone saves the cost of the separator, aside from all its other advantages.

THIS IS LIKEWISE THE SEASON when De Laval superiority counts for most over other separators, in closer skimming, larger capacity, easier running, easier handling, easier cleaning, and absolute sanitariness.

A DE LAVAL CREAM SEPARator bought now will easily save its cost before the end of the year, and it may be bought for cash or on such liberal terms as to actually pay for itself.

Look up the nearest De Laval agent AT ONCE, or drop us a line and we will have him look you up.

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SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and help.

If you, my sister, are unhappy because of ill-health, and feel unfit for household duties, social pleasures, or daily employment, write and tell me just how you suffer, and ask for my **free** ten days' trial of a **home treatment** suited to your needs; with references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by its use. I want to tell you all about this successful method of home treatment for yourself, my reader, for your daughter, your sister, or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand women's sufferings; what we women know **from experience,** we know better than any doctor; and thousands have proved there is **hope** even **for the hopeless** in my method of home treatment; If you suffer from **pain in the head, back,** or **bowels, feeling of weight** and **dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid,** to prove to yourself that these ailments can be easily and surely conquered at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured,** my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all—**young or old.** To Mothers of **Daughters,** I will explain a simple home treatment which speedily and effectually cures green-sickness (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by return mail. To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask for the free treatment to-day,** as you may not see this offer again. Address:

MRS M. SUMMERS - - BOX 309 WINDSOR ONTARIO

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

For the Sake of a Woman

First I think it was sheer panic at the prospect of banishment from one's own kind that drove us together. At any rate, I never encountered a more heterogeneous impossible herd than made up the passenger list on that trip. Even before "All ashore!" had been called I had mentally sifted down to Norling as my only possible hope of human companionship.

He told me afterwards, in that frank spontaneous way of his, that he had come to the same conclusion regarding me, which probably accounts for the fact that before the first day was over we had slid into a delightful and exclusive partnership for escaping boredom. I gathered that this Hawaiian trip was supposed to be an education.

Our mutual esteem was still running high as we leaned over the rail, watching Honolulu grow up out of the perspective, and were laying our plans for the first day ashore. It was an old story to me, but I had plenty of amusement explaining the harbor sights to Norling, until a bevy of information-hungry old maids fell upon me as an animated lecturer and pestered me with questions. Finally we managed to disentangle ourselves without brutality, and shifted forward.

The harbor activity was focussing upon us, the arrival of the big passenger ships being a rather important happening. While I was watching two old Chinamen in a sampan-like ark and tryink to figure out how they managed to keep afloat, Norling gave a sudden tug at my arm.

"Some one in the boat over there is trying to attract your attention, I think," he said.

Surely enough it was. I looked over toward the trim cutter, manned by bluejackets, and in the sternsheets discerned one of my boon familiars, Lieutenant Bobby Nicholson. Manifestly, Bobby was shouting and making frantic signs, but they were about as informative as the gestures of a crab. I couldn't hear above the din. But I did some non-committal wigwagging myself.

Within a few minutes we had warped into the dock. Thanks to the wheels of my experience, oiled with some coin of the realm, we soon had our hand luggage ashore and were pushing our way to safety through the regiment of professional assisters. We found Bobby Nicholson standing impatiently in front of the hotel when we got there. He had ridden.

"I'm in an awful rush," he spluttered after he had metaphorically fallen on my neck, and had been introduced to Norling. "Came to tell you to be sure to be at the blowout at the Colonial Club tonight. Bring your friend. Sure to have a good time. Didn't know you'd be back or I'd have sent you invitations. Good thing I saw you from the cutter. Well, so long. See you later. I'll be late for duty."

He was off with a rush. Then suddenly he wheeled in the centre of the driveway, and, shading his eyes from the sun, called back:

"I forgot to tell you your friend Drewit got back to town yesterday from Wailuku."

"Is he——" I began, starting after him; but he anticipated my query and called over his shoulder half mockingly, half pityingly:

"Yes, he is; worse than ever."

Then he was gone.

My face must have betrayed the sickening wrench at my heart. As I turned to Norling, who had heard the whole conversation, he laid his hand on my arm sympathetically.

"Is it," he said softly, "is it some one you care for?"

I told him. Sidney Drewit and I had been boyhood chums at home—chums through school; and then, years after, had picked up the thread of our friendship again in Honolulu. I told him of the ambitions and bright prospects of Drewit, which suddenly a year before he had overturned and cast aside like an empty cup. Since then he had been drinking himself to death—literally going to the devil, and seeming to glory only in the downward progress.

"But why?" asked Norling compassionately, "has he done it?"

"A woman," I rejoined. "Yes, a woman was the cause, although he has never mentioned it even to me. He had been engaged to a girl in England, but after he set out to perdition he ever spoke of her."

"Poor chap, poor chap!" said Norling softly. "We must do something for him; there may have been a mistake."

* * * *

Among the Britshers at the club that evening was Drewit, and I saw at a glance he had aged ten years in the six months since I had last seen him.

He kept one of the Chinese waiters almost exclusively busy serving him with drinks—big drinks—which he tossed off raw mechanically without a wince.

Later in the evening he came over to where Norling and I were hobnobbing with a couple of my intimates—Drewit's intimates, too, including Nicholson. Apparently Drewit was sober, but it struck me ominously it would have been better if he had not been after the brandy he had drunk. There were stories and jokes, and finally, as men will, afar from home, we reached the toasts.

Bobby Nicholson led off with a panegyric to "The Navy." Dixon, who had succeeded in the colony, toasted "Fair Honolulu," and some one toasted "God's Own Country." Finally some one called on Norling. He sprang to his feet enthusiastically. He raised his glass.

"To woman," he cried, "God's best gift to man!"

We were standing, glasses uplifted, ready to complete the ceremony, when I saw a peculiar change come suddenly over Drewit's face. With a curse, he hurled his glass from him, and its contents spread over the white cloth like splotches of blood. Then he wheeled fiercely, and shouted, with almost maniacal fury:

"That for women—all of them!"

Quicker than the eye could follow, a flush dyed Norling's face, and before we could prevent him he struck Drewit full between the eyes. Then we got between them. Not that it was necessary, though, because Drewit only sank to his seat and held his hand to the livid welt on his forehead. The old look of furtive despair had come back into his eyes. It struck me as almost disappointing that he had not resented the blow. But common sense triumphed, and I realized that if we could avoid scandal the thing must be patched up. Besides, my heart ached for both men—for Drewit, that he had been humiliated, justly though it was; for Norling because his reason had resumed sway and he was suffering from the sting of remorse at having sacrificed any hope of helping the man he pitied. Drewit was looking at me appealingly, and it suggested a solution for the time being.

"Come on, Drewit," I said, "and you, Norling—you are both my friends—let's walk out into the cool night air together. It will clear our heads and show us what fools we can make of ourselves."

It struck me as strange that Drewit needed little persuasion, although Norling, openly repentant, seconded the appeal. Not one of us spoke until we had walked far up the deserted street. It was Norling at last who broke the silence.

"I am a brute and a cad," he said to Drewit; "not fit to associate with gentlemen, and I ask you to forgive me. I will apologize publicly."

"It was my own fault," rejoined Drewit dully.

"No," said Norling, "you did not understand my feelings, and I want you to know, so that you can forgive me."

Drewit turned and placed his hand on Norling's shoulder.

"My boy," he began; and then he paused as if in search of words.

"My boy," he repeated, "it is I who should ask forgiveness of you. Tonight has shown me there are two sides to every shield, and I must show you mine, so you will understand my bitterness and at the same time value the love of that good woman—back home. I have never spoken before, and I need not ask you to respect my confidence."

Norling and I simply nodded.

"To make the thing clear," continued Drewit, his voice hard and dry, "you should know that I once felt toward a woman as you feel—now. I placed her so high in my heart she seemed to me the well-spring of everything in the world that was good and true and worth a man's best effort. She was my savation. I was too poor to marry then, and so I came out here and struggled and denied myself, and then, when the goal seemed just within my reach, when I thought I had won my happiness, I found I had been worshipping a hollow mockery."

Drewit stopped and shuddered, drawing his hand across his eyes in a dazed sort of way, while we waited in painful silence. At last he pulled himself together.

"She wrote me she could not marry me; that she was engaged to another man," he continued, in a colorless monotone. "If she had loved the man I could have forgiven her, because I loved her enough to know what love does to one. But she did not even allow me to retain my respect for her—that was the worst of all.

"It was ambition, selfishness, feminine vanity, that actuated her. Calmly, with a cool kindness, she wrote me she loved me better than the man she was to marry, but that he was rich and I was not. Every moment, she said, even while she was with this man, enjoying the luxury she was too weak to refuse, her heart would be with me. According to her standard, she regarded this confession as a balm for the wound she had inflicted. She was incapable of understanding that she had shattered more than my hope of happiness with her—that she was poisoning my very soul against life itself. And that is why I have never gone back. In a colony one may go to perdition without causing scandal."

He gave way to a burst of mirthless laughter. It was Norling who spoke in an awed tone.

"You should have gone back," he said. "There may have been a mistake. Loving like that, I cannot understand why you surrendered so easily."

"There was no mistake," said Drewit calmly. "I wrote several frantic letters, and received one reply that banished all doubt. I think I will read it aloud; it will convince even you."

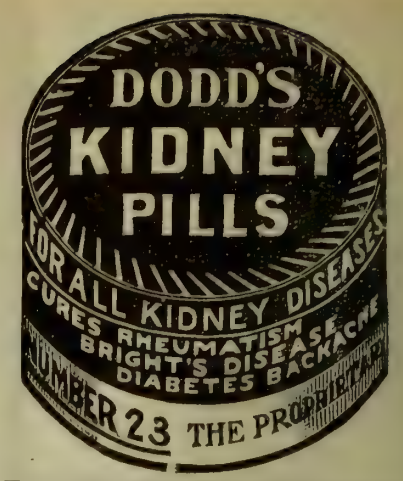
He fumbled in his wallet. Then he held up the letter so that the bright light from the moon fell upon it. The date he read was of a year before.

He began in a clear, even voice:

"My own Sweetheart Sid—It is hard for us both. But what I wrote before is true. And all the time I love you, dearest; love you as I shall never love another. I know I am spoiled and selfish and weak; but weighing in the balance against your love are wealth, position, luxury—and I cannot give them up—all that my soul craves—except you. But you must not rebel, dearest—you will forget——"

"Forget!" he muttered, half to himself. "Forget!"

From the club house in the distance,



WHY WOMEN WRITE LETTERS

To Lydia E. Pinkham Medicine Co.

Women who are well often ask "Are the letters which the Lydia E. Pinkham Medicine Co. are continually publishing, genuine?" "Are they truthful?" "Why do women write such letters?"

In answer we say that never have we published a fictitious letter or name. Never, knowingly, have we published an untruthful letter, or one without the full and written consent of the woman who wrote it.

The reason that thousands of women from all parts of the country write such grateful letters to the Lydia E. Pinkham Medicine Co. is that Lydia E. Pinkham's Vegetable Compound has brought health and happiness into their lives, once burdened with pain and suffering.

It has relieved women from some of the worst forms of female ills, from displacements, inflammation, ulceration, irregularities, nervousness, weakness, stomach troubles and from the blues.

It is impossible for any woman who is well and who has never suffered to realize how these poor, suffering women feel when restored to health; their keen desire to help other women who are suffering as they did.

Avoid waste of Fuel

Straight Walls Firepot of "Sunshine"

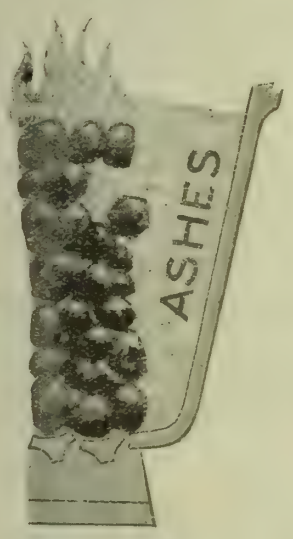
Unless you KNOW positively that a cheaper furnace will heat your home without waste of fuel, there is small satisfaction in saving a few dollars on its purchase. The Sunshine Furnace saves coal because it is well made and because every part has been carefully thought out.

☞ **LOOK IT OVER. Any one can see that the greatest heating factor in a furnace is the fire-pot; that a pot with straight walls like the Sunshine fire-pot will give off more heat than one that must often have an outer lining of ashes.**

Doors and dampers that are tightly fitted will certainly hold the fire longer than those that are loosely fitted. The wider air passages and larger radiating surfaces of the Sunshine must heat the air much more readily. These Sunshine Furnace features are coal-savers that mean much in mid-winter.

If you are looking for economical heating, you must see cearly that it will take a good modern, well-made furnace to supply it. You will naturally think well then of

McClary's Sunshine Furnace



Slanting Walls Firepot gathers ashes and decreases radiating surface

Saving coal interests you, of course. Then you will want a copy of our booklet. Send the coupon today for a copy. If you want information about the cost of heating your home, we will let you have it promptly and without charge. If you will write to our Heating Engineer, he will show you how to plan your heat distribution so as to get the utmost warmth with the least expenditure. Write him, giving the size and number of rooms in your home—a floor plan of the upstairs and downstairs—and he will give you the probable cost of putting in a system that will give you the heat you want where you want it. Fill in and send the coupon direct to the factory.

McClary's

London Toronto Montreal Winnipeg
Vancouver St. John, N. B. Hamilton
Calgary Saskatoon Edmonton

Kindly send me without expense on my part.—

1. Your booklet on the Sunshine Furnace.

2. Also forms for filling out, so that your heating engineers can tell me how to order and install a system that will properly heat my home.

Name .....

Address .....

through the stillness of the night, came the strains of an air the band from the cruiser was playing, and borne clearly down the cool night breeze we could distinguish the melody: "Then You'll Remember Me."

"Listen!" said Drewit, with a laugh that snapped like a whiplash. "Her favorite song! She sang it the night we parted, and she gave me a bunch of forget-me-nots—her flower."

Norling started, as if to speak, apparently, but Drewit began to read again:

"This man I am to marry I cannot even respect. He is vulgar—even vulgarly rich; that is, his father is, and he will get it all. But I have stirred up unnecessary ambition in him so he would not always be dangling at my side—a living punishment for my worldliness.

"He has been a good-for-nothing, with mean tastes and instincts. You may judge when I say that he has tattooed on his arm the picture of a prize fighter. I tell you these things so you will pity me. Once during a carouse in New York he shot a man, and barely escaped punishment. I have nicknamed him 'The Savage'—he thinks from affection, being too much of a fool to suspect the truth——"

A low groan from Norling caused us to turn quickly. He had staggered back against a tree.

"What's the matter, Dickie?" I cried. "Are you ill?"

"No," he said tremulously; "only fighting with myself against belief in what I attacked Drewit for saying tonight."

He drew himself up half-heartedly, like a man that has perforce determined to face some crisis that inevitably must spell ruin for him.

He pulled up the sleeve of his coat and shirt, baring his arm.

"Look!" he cried. "Do you see the picture of Fitzsimmons tattooed on my arm? When I left she sang her favorite song: 'Then You'll Remember me,' and gave me a cluster of forget-me-nots as a token of faithfulness. She nicknamed me 'The Savage' because I was a good-for-nothing and shot a man, as she described. Because I am so vulgarly rich she takes me, although she loves Drewit."

He plunged his hand into his breast pocket, and from the packet he produced tore out a bunch of withered blossoms.

"See!" he cried, throwing them on

"Acme"

Canada's famous White or Blue Laundry Starch

For years, clever Canadian housewives have used "Acme" Starch for all their home laundry work. They know that "Acme" Starch always gives the best results. At your grocer's.

THE CANADA STARCH CO. LIMITED
Montreal, Cardinal, Brantford, Fort William.
Makers of "Crown Brand" and "Lily White" Corn Syrups, and Benson's Prepared Corn.

248E

BURDOCK BLOOD BITTERS CURED DYSPEPSIA.

Unless the stomach is kept in good shape your food will not digest properly but will cause a rising and souring of food, a feeling of rawness in the stomach, pains in the stomach or a feeling as if a heavy weight were lying there.

Burdock Blood Bitters cannot be surpassed as a cure for dyspepsia and all its allied troubles.

Mr. James R. Burns, Balmoral, N.S., writes: "About two years ago I was badly troubled with dyspepsia, and could not get any relief. I tried most everything, not even the doctors seeming to do me any good. One day a friend told me to try Burdock Blood Bitters, as he had seen it advertised. I did so, and by the time the first bottle was gone I felt better, and after taking three bottles I was completely cured. I highly recommend it to all sufferers from dyspepsia."

B.B.B. is manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

the ground. "I am going to stamp her out of my heart as I do these tender, lying flowers under my feet!"

* * * *

It was Drewit who placed his arm around Norling's shoulders with a masterful tenderness.

"Don't" he pleaded gently. "Don't lose your hold, as I did. I was a fool; you made me see that tonight. We understand each other—you and I—we must fight it out together."

THE CARE AND TRAINING OF CHILDREN

The subject is not new. It has existed since Eve's motherhood, and while it perhaps had little thought devoted to it in the first decade the interest has gradually increased so that today we have many books written on Children's Training, Children's Rights, or the Care of Children.

Therefore I do not expect to be able to bring forth any new ideas, but hope to so present some of the more important facts that have either lain dormant or become entirely forgotten by us that we will have a new and full understanding of this important subject.

As I am speaking chiefly to mothers, I shall try to handle the subject as best I can from a mother's standpoint.

The care and training of the child does not by any means begin with its advent into this world. Physiologists and psychologists state definitely that the influences affecting the child begin before birth. Therefore it is very necessary if we desire healthy, happy children that care and training begin them also. How can this be accomplished? Only one way. The mother-to-be needs plenty of plain, well-cooked wholesome food, plenty of fresh air and healthful exercise—but not overwork—and, above all, loose clothing and a cheerful contented mind. Many a weak or deformed child is the result of a mother's too tight clothing, and there is little doubt that many a criminal act could be traced to a mother's rebellious mind.

The Baby

With the arrival of the baby a new care is added. But, oh, how sweet a care!

See to it that the baby has plenty of warm, soft clothing; never torture the new-born babe with the old-fashioned starched, tucked and be-frilled linen slip. The dainty flesh is too tender to bear the contact without becoming irritated and sore. Bathe the baby daily; see to it that the room and water are warm, and make good speed lest the baby get chilled. Dry thoroughly by soft pressure and repeated patting. Apply a good powder to all folds and clefts.

A sure sign of the good mother is the perfect condition of these parts.

Feeding

In regard to feeding the baby, by all means give it the only ideal nourishment: that obtained from the mother. It is the only safe nourishment, for the milk goes right into the baby's mouth and never sees the light of day, and is therefore free from bacteria and germs that are likely to get into the cow's milk on its long journey from the cow to the baby, and likewise with the patent foods so highly advertised.

Sleep occupies much of baby's time twenty-two hours out of the twenty-four being required up to one month, and at least sixteen hours at six months. When sleeping give the baby a supply of fresh warm air the year round. It may sleep out of doors in summer if provided with a cool, shady place and not exposed to heat; but to wrap the baby in coat, cap, and mittens and put it out on the verandah to sleep in midwinter is, I consider, preposterous. If mother wishes a sleep she does not put on her fur coat and lie in the hammock with coverings enough to tire a mule, and tucked in so tight she cannot move. By no means; instead, she will loosen her clothing, put on her kimona, and lie with light coverings in a warm room supplied with plenty of fresh air. What comfort or rest does the baby get if while sleeping it is wrapped and bundled and weighted down with coverings?

Training

The baby's training begins very early, for no one is more susceptible to influences than the baby. Regular hours for food and sleep are essential, but these things should be carefully, not rigorously, observed. The wants of newly born babes may be subject to some variation, and the sympathy of the mother should lead her to study and gradually interpret baby's desires. Some claim crying is good for a child, but we must remember that crying is its protest against pain and discomfort, and we should not drudge giving up time to it and soothing it, thereby infusing into the little life love that will nurture it into ampler life.

When baby has reached the stage of crying for wilfulness, care must be taken to make the child recognize that the mother is not swayed by its self-will or anger, but adheres firmly to her path of steadfast love and duty. When the babe recognizes that fact an important step has been taken in its training.

As the child grows older and begins to move about at its own free will it is very natural for it to want many things that are not good for it to have. When it is trying to secure some loved article, tell the child no, no, and divert its attention by bringing forward some new thing that it may have. If ever the child has secured what it may not have, take it gently away, at the same time saying no, no. It soon learns what it may and may not have. But if persistent in securing forbidden articles, a smart slap on the hand is generally very effective and saves the child and mother heart aches which are sure to follow later if the child is allowed to continue snatching that which it may not have.

Growth

The growth from babyhood to childhood is so gradual that it is very hard to know where the dividing line is, but as truly as the child is father of the man, so is the baby father of the child; and if care is taken of the physical and mental welfare of the babe the child is more easily managed. The one thing essential for every child is happiness. It not only helps him physically, but his mental and moral forces are materially benefited, and if we desire a child healthy in mind and body, keep him in close touch with nature. He may often be mud-smeared, and as a result have torn clothing, but that is a necessary consequence of direct, useful contact with all sorts of interesting things that are helping to mold and form character. The child who has always to stop and think of his clothes first is truly to be pitied.

Children's Rights

The child has rights which we often ignore. He has the right to a genuine, free, serene, healthy, bread-and-butter childhood; but often in our Canadian homes there is so much hurry and worry, and our manner of living is so often keyed to concert pitch, that we drag the children along with us, and the result is far from satisfactory. We cannot expect a healthy, happy child under such circumstances. With the child as with the baby, he needs plain food, regular hours for sleep, and plenty of fresh air and healthful exercise.

As to the training of the child, there are many theories written, some practical and many very impracticable. There can be no hard and fast rules made for the training of children. We can generalize to a slight extent, but each individual child must have treatment peculiar to himself; and to make training a success the child must first of all be understood, for no one has a right to undertake training a child who does not first take pains to understand him. Secondly, and not less important, the person undertaking this duty must be endowed with a lot of patience, tact, calmness, an excellent memory, and plenty of firmness; but care must be taken that firmness does not shade into obstinacy. Mothers, examine yourselves, and if you do not possess all these qualities, cultivate them, for they are not of an impossible nature, and you will find ample reward for your trouble in the betterment of your child. Thirdly, let there be few rules. Many an immoral act of the child has first been suggested by the strenuous rules laid down by the parents.

Obedience

The first thing every mother should strive for is to teach the child obedience. It takes a great deal of care and time to accomplish this, but when you hear a mother flatly say of a child five or six years of age: "I simply cannot make him mind; he is beyond me," you can at once make up your mind that it is no fault of the child, but of the mother. Why does he not obey? Simply because the mother has not insisted on obedience. How often do we hear: "Harvey, you must not do that; stop now!" and similar expressions, and when the forbidden act is done we hear a doleful voice wail out: "I'll tell your father!" and straightway it is all forgotten by the mother, but not by Harvey. He knows that mother failed, and he knows that he can disobey again, and yet she will fail. Is there any wonder that he soon gets beyond her? The child loses all respect for his mother's wishes; he knows nothing and fulfils nothing but his own desires.

How different the child who, when told not to do a certain act, it is seen to that he does not do it. All young children are persistent in their wilfulness, and it is here the mother needs her memory, her patience, her tact, and her firmness. Do not be afraid to talk to the child and tell him why he should obey. Even very young children can understand a great deal if told to them simply and kindly. Do not think it silly and a waste of time to explain to the child the reason he should obey you and not do certain things. By so doing you gain the child's confidence and he soon understands that if you say he must not do cetrain things you have a good reason for saying so, and obedience comes readily. But if other methods fail to secure obedience do not be afraid to use the rod of correction.

Punishment

In these days a great deal is said against corporal punishment, due no doubt to the too frequent and severe use of corporal punishment a few generations back. But I believe that our Puritan forefathers, whose two strong points were the Bible and the birch rod, had more God-fearing and parent-respecting children than we of the twentieth century have.

I do not mean to advocate corporal punishment to any great extent, but I must say that there are times when moral suasion fails perceptibly, and if corporal punishment is brought to the

I bought a horse with a supposedly incurable ringbone for $30.00. Cured him with $1.00 worth of MINARD'S LINIMENT and sold him for $85.00. Profit on Liniment, $54.

MOISE DEROSCE.

Hotel Keeper, St. Phillippe, Que.

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Pupils prepared for University Matriculation in Arts, Science, Engineering, Medicine, and complete instruction in Commercial Course, Stenography and Typewriting. Students prepared for Civil Service Examinations.

Expenses Moderate.

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For Calendar apply to
PRINCIPAL W. L. ARCHIBALD,
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Watch for Announcement of
ACADIA LADIES' SEMINARY
next week.

CANADIAN PACIFIC

Farm Laborers EXCURSIONS From Maritime Provinces

Aug. 12th 26th

Conditions and Arrangements same as previous years.

M. G. MURPHY, D.P.A., C.P.R., St. John, N.B.

CHAMBERLAIN'S TABLETS
Act directly on the liver and regulate the bowels. Price 25c.
A month's treatment in a package.

rescue the child is often raised a good big step upward on the ladder toward obedience and character forming. When the child has learned obedience his character forming is not so hard.

Force of Example

If we wish our children to have good morals and an upright character we must set a watch upon ourselves, for the children are very susceptible to object lessons, and learn from example in one week more than they learn from a book in one year. Therefore we must be careful of our child's early companions. Much or all of our care and influence can be spoiled by the child coming in contact or companionship with a street urchin whose chief training has been to learn to dodge the police.

Keep the Child Busy

A child must be kept busy. It is his very nature to be busy, and it is our duty to provide him with something that will keep him busy. As soon as the child knows the name of familiar objects, and can walk, he can be taught to do little things for mother, such as bringing her thread or thimble, dust pan, rubbers, etc.; and these duties should enlarge as the child grows older. The child enjoys doing this, and it is training him to know he is not living for himself alone. Bestow plenty of praise; children like to be told they have done a thing well, and it stimulates them to greater effort. Be careful not to praise work that you know has been carelessly done, and it is not necessary to condemn. The child knows that he has not put forth effort, and generally your look of disappointment is not forgotten, and the careless work is not repeated. But his activity should not be all work. The child needs more hours for play than for work, and it is our duty to furnish him with toys and books suitable to his age and taste.

Trust the Child

The lack of truthfulness is sometimes found among children and is one of the hardest problems to deal with, but usually the best results are obtained by letting the child see that you are trusting him. It seems to stick to his memory that he is being trusted, and after a time he seems to feel it hardly worth while to tell or act the lie.

In the first part of this paper I stated that the child has rights which we should respect. I just wish to add one more right which belongs to the child. He has every right to be taught that other people who are not children have rights also, and he should be trained to respect those rights. He should learn that a street or concert hall filled with adults is no place for a game of tag. The child who does not respect the rights of his elders grows up a very self-satisfied and egotistical man.

Reverence

All through child training we should never lose sight of the training for reverence. Whatever our class or creed, we all believe in the Omnipotant One, and if we wish our children to be their very best, teach them love and reverence for the Divine. For, after all is said and done, true reverence for our Maker is all that makes life worth while.

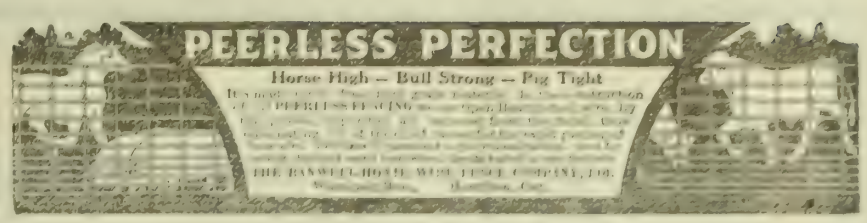

TABLE DECORATING HINT

One of the most satisfactory colors to use for table decorating is rose pink, which bears the light of the sun and artificial lights without much change. So often one plans a color scheme and, alas! when the lights are turned on the blue looks green, violet changes its hue, and yellow looks pale and faded. Red is a splendid color to use in winter, but is dangerous in combination. Menus and guest cards for flower luncheons are made by cutting leaves out of water-color paper and painting them in natural color. Next select your flowers and cut them out of cotton, spot each with its natural color and sprinkle lightly with gilt, pull out the cotton to make the flower look real. On the leaves in gilt is painted each guest's name. Large petaled flowers are the best to use. Fruits can be used in this way, making charming souvenirs if well done. Now that summer is here, a fruit luncheon, using all kinds of fruit beverages and salads in the menu, would be quite the thing.

Don't handle gasoline by the light of a lantern or other open light. If you have no electric light where the tank is located, never fill it except in daytime.

ABOUT THE HOUSE

Whip cream in a pitcher instead of a bowl, to do it in half the time and [illegible]

A cloth dipped in ammonia will often remove the stains from the collar of an overcoat.

Paraffin rubbed on the heel of stocking will cause them to [illegible] longer without wearing out.

Orange fritters are as delicious an accompaniment to broiled or fried ham as apple sauce to a spare rib.

Dates stuffed with peanut butter and then rolled in sugar are a pleasing change from dates stuffed with nuts.

In cooking beans and peas their flavor will be much better if they are cooked in as little water as possible.

If a curtain or portiere pole is rubbed with hard soap before being put up, the draperies will slip on easily.

Dates and figs cut in small pieces and served with plenty of sugar make a tasty accompaniment to a dish of rice boiled in milk.

Bess—And is Freddie in any danger from his compound fracture?

Belle—Not a bit. His nurse is a fright.

1916--ALL CANADA--1916

The Prince Edward Island Exhibition

Charlottetown, P. E. I.

September 26 to 29, 1916

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Entries in Live Stock close 15th September--in all other classes entries close 19th September

3 Days Horse Racing---8 Classes

Special Attractions in Front of Grand Stand

For Prize Lists and all information write the Secretary

FRANK R. HEARTZ, Pres. *C. R. SMALLWOOD, Secy-Treas.*

Ford
THE UNIVERSAL CAR

New Prices August 1, 1916

The following prices for Ford cars will be effective on and after August 1st, 1916

Chassis	$450.00
Runabout . . .	475.00
Touring Car . . .	495.00
Coupelet . . .	695.00
Town Car . . .	780.00
Sedan	890.00

f. o. b. Ford, Ontario

These prices are positively guaranteed against any reduction before August 1st, 1917, but there is no guarantee against an advance in price at any time.

Ford Motor Company of Canada
Limited
FORD, ONTARIO

FEATURES GATHERED FROM THE NEW BRUNSWICK WOMEN'S INSTITUTE REPORTS

(Continued from page 698)

and that more institutes will take part in the competitions.

"Allied for Right" Button Day, May 21st, was a happy one for many of our institutes, when large sums of money were raised by them for the Motor Ambulance Fund. Late that night our institute handed over to the supervisor $501.40, after a thorough canvass of the city, assisted by many willing workers. Since then we have contributed small sums to the Red Cross and Patriotic Funds. We are hoping to raise more money for patriotic purposes by the sale of a Quotation Calendar.

In taking up the year's work, let us remember the words of Lowell:

"Thousands of years ago a leaf fell on soft clay and seemed to be lost. But last summer a geologist in his ramblings broke off a piece of rock with his hammer, and there lay the image of the leaf, with every little line and every vein and all the delicate tracery preserved in the stone through those cneturies. So the words we speak and the things we do today may seem to be lost, but in the great final revealing the smallest of them will appear."

Lower Kingsclear.—Organized August, 1915. Present membership 24. Have already repaired the Agricultural Hall, in which the meetings are held. Meet every week to knit and sew for the Red Cross, making hospital shirts and socks.

Meductic.—Organized in June, 1915, with a membership of 10, which has since increased to 18. Over isxty dollars has already been raised for Red Cross work. Forty-four dollars was cleared at a pie sale. Twenty dollars of this went to the Ambulance Fund and $10 to the Red Cross Society, the remainder spent in yarn for socks. Twenty dollars was raised by an autograph quilt, this to be divided between the Machine Gun Fund and more yarn. The younger members are getting up a play at which they hope to increase the funds for the work. The result of four months' work is very encouraging.

Nashwaaksis.—Organized in October, 1914, with a membership of 29, which has since increased to 41. Roll call is answered by suitable quotation. It was decided at the first meeting to take up Red Cross work, and each member gave 10 cents to start the Red Cross Fund. In November $27.25 was added to the fund by a supper, and in February $62.50 was collected by the members throughout the neighborhood for the Belgian Relief Fund. On Button Day $20 worth of "Allied for Right" buttons were sold, and $18.50 received as donations from other sources. Of this money $40 has been given to the Motor Ambulance Fund and $38 for material for Red Cross supplies, which was made up into over 100 articles for the soldiers. Besides this over 400 articles were made up from material supplied by the Daughters of the Empire, Fredericton.

A school committee is appointed every two months to visit the school. As a result two drinking fountains have been installed in the school rooms. A committee is also appointed every two months to visit the si k. The institute has been a great help socially. and we are doing our best to live up to the motto "For Home and Country." a

New Maryland.—Organized in June, 1915, with a membership of 11, which has since increased to 13. The first attempt to raise money was a pie and ice cream social, from which $57.00 was raised, and was devoted to Red Cross purposes. Twenty-five dollars was voted to the Field Ambulance Fund. Some papers have been read, such as "A Helpful Paper for a New Institute" and "Institute and Home," with brief discussions on the same subjects. We are now clothing a poor and aged lady who has no one to support her.

Cross Creek and Stanley.—Organized in November, 1913, with a membrship of 18, which has since increased to 40. The principal work carried on is Red Cross work. One hundred and ninety-one dollars and ninety cents has been expended on soldiers' comforts and hospital work. This has been raised through teas, concerts, and mite boxes. Cross Creek and Stanley each have separate beds endowed in the Canadian Hospital in France. A contribution of $40 was given for flour for the Belgians, and $130 was raised toward the Machine Gun Fund. Programmes are in the form of a wall calendar, Cross Creek making out six months' programme and Stanley the remaining six. Red Cross work is forwarded to the Daughters of the Empire, Fredericton.

Southampton.—Organized in June, 1915, with a membership of 16. Present membership 25. Since organization $27 has been raised for Red Cross work. Forty articles, including socks and hospital supplies, have been forwarded to the Daughters of the Empire, Fredericton. No institute work has as yet been undertaken. The Red Cross work is very essential, and we hope to branch out along other lines as well.

Tay Settlement.—Organized in June, 1915, with membership of 26, which has since increased to 41. The principal work so far has been knitting and sewing for the soldiers. Money to carry on Red Cross work has been raised in various ways. The first money was a donation of $40, the proceeds of a social. An ice cream social in July netted $45. Twenty-five dollars of this was donated to the Motor Ambulance Fund. In September the gross receipts of a concert and fancy sale amounted to $107. The roll call has been answered by Household Hints, Proverbs, Jokes, Quotations, etc. Interesting papers have been read on "The Present War," "Current Events," "Home Nursing," etc. Recipes have been exchanged and discussions held on "Preserving Fruits," "Canning Vegetables," "Books We Should Read," and "School Improvements." The young girls have taken a great interest in the work. Of the 41 members, 20 are young girls. Our institute work is still in its infancy, but we feel that a great deal of good can be done by the united efforts of the women. Meeting together with a common interest will result in a better feeling of friendship and neighborliness, which is in itself worth while.

Williamsburg.—Organized in October, 1914, with membership of 16, which later increased to 26. No special subjects have been taken up by the institute. On the 24th of May an entertainment was held, realizing $93. This was used to endow a bed in the Duchess of Connaught Hospital in England; $20 to the Ambulance Fund; and the remainder expended on material for Red Cross work. One hundred articles, including socks and hospital supplies, have already been forwarded to the Daughters of the Empire.

THE CLOVER CROP

(Continued from page 696)

the use of a clover-huller. This machine will be stationed at some point centrally located in various districts where the number of farmers served will warrant its being operated.—O. C. Hicks, Soils and Crops Division, New Brunswick Department of Agriculture, Fredericton.

"SWAT THE COCKEREL"

While you are swatting the old "rooster," swat the young one and make him a capon. June is the best time for caponizing surplus cockerels. If young birds are beginning to develop combs and wattles they are ready for the operation. The heavy breeds should be caponized at about two to two and a half pounds; the light breeds one and a half to two pounds. Rocks, Wyandottes, and Reds make the choicest capons.

Many people have hesitated going into this phase of poultry production because of the common opinion that the operation was a difficult one. This is not the case. With very little experience an operator should not have over 5 per cent loss. Since these nearly all result from a severed artery at the time of the operation, such birds can be killed at once and used for food. One can become familiar with the details of the operation from the directions which accompany each set of instruments, or from Farmers' Bulletin 452, United States Department of Agriculture, Washington, D. C.

Practice shows that a 10-pound capon can be grown on the same amount of eed and in the same time as an 8-pound cockerel. On the most undeveloped markets capons bring from three to six cents per pound more than cockerels, and when well established seldom sell for less than 18 to 25 cents per pound.

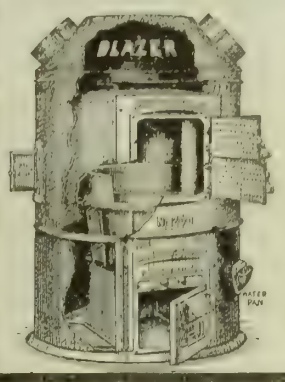
It is not only the greater weight and high selling price that makes capon raising attractive, but their sweet meat of fine flavor wins a place for them on every table.

HANDLE THE PULLETS

Handle the chicks, and market deformed birds as soon as they are of market size. Crooked backs, hip joints of unequal height, crooked toes, long beaks, combs with side springs, duck feet, off-colored eyes, and pronounced tendency to off-colored feathers cannot readily be detected without handling the birds. It is well to sew a band of red flannel or mark with colored paint the legs of birds destined for the early market. A dab of paint on the wing bow is also good. Let these birds run with the others till about the size needed, and then pen and fatten. Many a sale can be made at the door if the chicks are cooped and ready. Keep them free from lice and growing every day, but get rid of them quickly.

Too much attention cannot be given to the selection of cattle for breeding or feedig purposes.

ENTERPRISE
Warm Air
Blazer Furnace



Healthful in principle—durable in construction, —convenient in operation—reasonable in first cost and economical in consumption of fuel,—the Enterprise Blazer Furnace is the choice of nearly every man who investigates the merits of different heating systems.

Write for free booklet containing valuable information. Every householder should have it.

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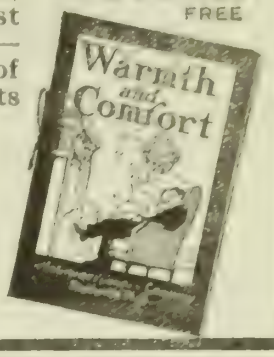


Enterprise
FOUNDRY Co. SACKVILLE, N.B.

Here is a reliable Mower for cutting your hay

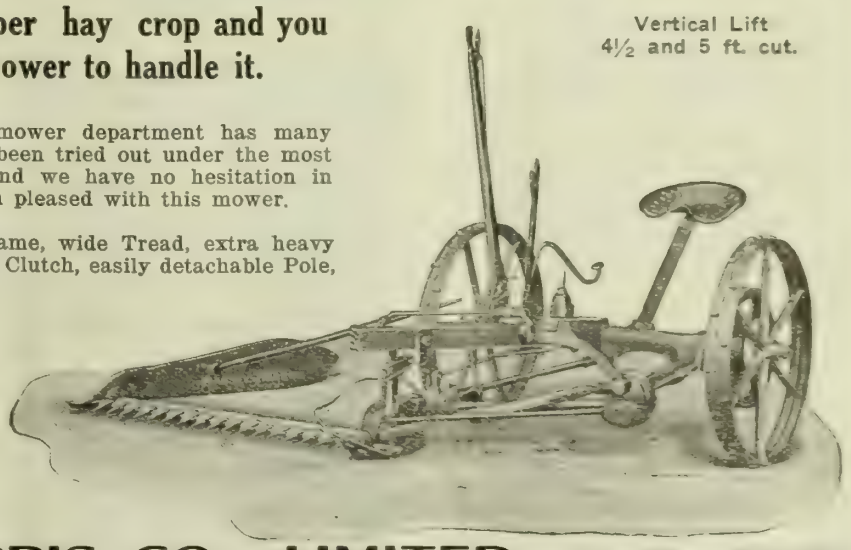
Prospects are for a bumper hay crop and you will need a reliable Mower to handle it.

This latest product of our mower department has many new features—all of which have been tried out under the most difficult and trying conditions, and we have no hesitation in saying that you will be more than pleased with this mower.

It has a strong one-piece Frame, wide Tread, extra heavy Push Bars, Improved Gearing and Clutch, easily detachable Pole, simple and easy Vertical Lift, Under Draft, Flexible Swath Board and many other features you must see to really appreciate.

Our nearest agent will be glad to show you.

Vertical Lift
4½ and 5 ft. cut.



MASSEY-HARRIS CO., LIMITED, Head Offices: TORONTO
Headquarters for Maritime Provinces—MONCTON, N. B.
AGENCIES EVERYWHERE

BORDEAUX AND THE BLUESTONE QUESTION

(Continued from page 700)

and bitter rot, for it is well known that lime sulphur does not control these fungi nor even scab in a season when there is much moisture.

Why then is it that in spite of the fact that Bordeaux is acknowledged to be the best fungicide, and far superior to lime sulphur, that the latter has come into use? The answer is, plainly, because home-made Bordeaux is apt to cause severe damage.

If thousands of practical growers state that there is this danger in using home-made Bordeaux, I am willing to take their word for it.

It is proof enough that when they make home-made Bordeaux they do not know what they are getting, and it is for this reason only that so many have given up its use, for even if the results obtained by it and lime sulphur were the same, no one with a sense of smell or regard for himself and his team would use lime sulphur in preference.

Many Years of Experiments

Over sixt years ago we began the manufacture of paris green (and, by the way, you can get the formulas for making that, but I hate to think what would happed to your crop when you used it), and later of arsenate of lead.

Then, on account of the country-wide complaint about burning with home-made Bordeaux, we began the manufacture of arsenate of lead and Bordeaux combined.

Our chief chemist, who has been with us for about twenty years, with his assistants, began experiments that showed why the grower does not know what he is getting when he makes a similar preparation.

Guesswork, Poor Work

How many growers know that bluestone contains iron, sulphur, other impurities, and often free sulphuric acid, and that these ingredients vary in amount in different lots of bluestone?

Therefore when you are buying bluestone you are making your first guess, for what grower ever has it analyzed? Lime over 99 per cent pure should be used, but does the grower know whether the lime he gets is over 99 per cent pure?

One thing is known, and that is that if you leave home-made Bordeaux mixture standing it will turn black.

What would be said of Adheso if it did that?

Many who read this article are using Adheso orange label. Make some Bordeaux mixture and then mix up some Adheso orange label and let them stand, and see what happens. You certainly will know then that you are getting something you don't want whe you make Bordeaux mixture.

When you see the Bordeaux mixture turn black you will realize that a powerful chemical reaction is taking place, and know why, even though it is always sprayed when freshly made, it goes through chemical changes on the leaves and fruit that result in burning and russeting.

This then, as cheimsts, was our problem. To do in the manufacture of arsenate of lead and Bordeaux combined what we had previously done in making arsenate of lead. This was to produce a material that gave the beneficial effects desired without damage to foliage or fruit.

This was not the work of a day, but of years. We found that in buying bluestone there was much that we had to reject, and the same with lime, that even the purest raw materials we could buy had to be further purified. How we do this, and how we make our combinations, I naturally am not at liberty to say. One thing is certain: that we obtained after long experiments a material so pure and stable against reaction that it showed no such dangerous chemical changes either in the spray tank or on the foliage or fruit, as ordinary Bordeaux.

Although it was safe and far superior to ordinary Bordeaux chemically, yet its physical qualities were not so far advanced as its chemical.

It was not nearly as gritty as home-made Bordeaux and stayed in suspension in the spray tank much better, for homem-ade Bordeaux must be violently agitated. In addition, it only stuck a little better than Bordeaux.

We had thus far produced the purest chemical mixture known, and of superior physical qualities, but we felt before we could generally urge its use by the thousands of growers who were satisfied with our arsenate of lead that it should be made as nearly ideal as possible.

Adhesive Quality at Last

Ever since the discovery of Bordeaux mixture by Millardet, chemists here and abroad have endeavored to give it adhesive qualities. You will find in bulletins similar statements to "the value of a spray chemical depends upon its adhesion," and "if it had not been for rains which washed off the Bordeaux the results would have been far better."

In making experiments to secure greater adhesion, or sticking quality, I several years ago hit upon a way to produce the material so that it actually was not washed off by rains, and at the same time was of such a nature as not to interfere with the breathing of the leaves.

I further found methods of eliminating all grit, and in creating a covering quality and degree of suspension in the spray tank that is unknown in home-made Bordeaux.

It is during and immediately after rain that the chief fungous infestations take place. Therefore it is little wonder that Adheso gives infinitely better results than a material which is washed off and leaves the fruit and foliage open to the attacks of the fungi.

It is not the thickness of the coating of copper or amount of copper in a mixture that goes onto a leaf or fruit that counts, but the completeness of the coating. A thin, unbroken film of copper hydrate will afford absolute protection against the fungi, which is what Adheso does, whereas a heavy coating of copper that leaves many parts of the foliage unprotected and is almost entirely washed off by rain cannot give protection.

Prices Compared

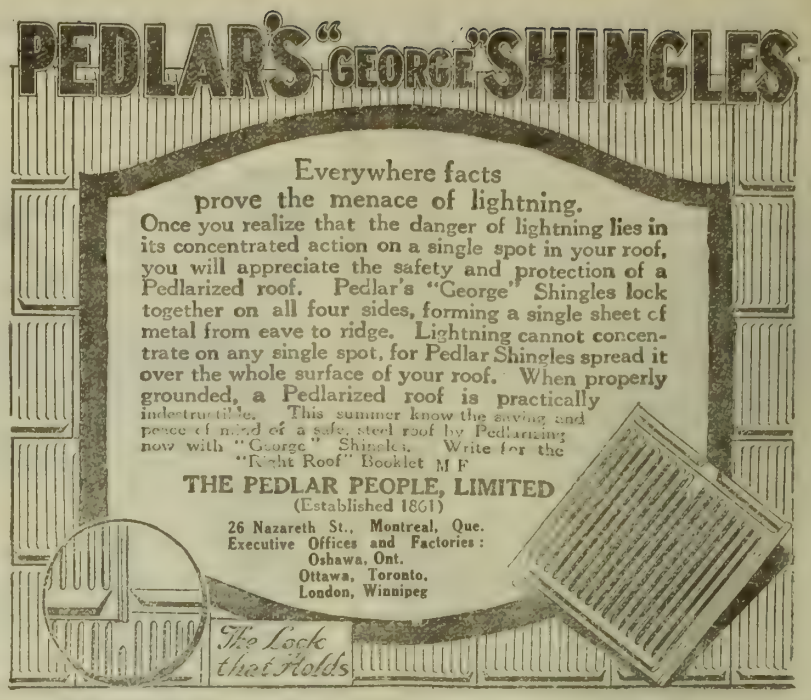
I think that there is no advice that has been given the grower that has done him so much damage as that in regard to what spray chemicals should cost him per pound, and how he can make them cheaper per pound himself. In giving figures of the cost of home-made materials one thing is almost always omitted, and that is the cost of labor. Surely the grower's time is worth something.

Ordinarily Adheso costs the grower about the same as home-made spray, but this year, due to the fact that we bought raw materials very early and have given the growers the advantage of it, the cost has been considerably less. It is foolish to figure what such materials cost per pound. The only way is to figure what they cost per spray tank.

A home-made preparation may only cost 10 cents per pound, but as you have to use over 13 pounds of it to 50 gallons, the cost per spray tank is over $1.30. Adheso orange label costs you 13 cents per pound, and 4 pounds of it are commonly used to 50 gallons, at a cost of 52 cents per 50 gallons of spray material.

I ask all growers who read this article to watch carefully the results obtained by Adheso this year and judge for themselves, unaffected by what anybody else may say, whether it or home-made Bordeaux gives the best results, not only in regard to burning or russeting, but also in regard to the amount of clean fruit produced.

A mistake often made is in being misled by a fancy for certain shapes, colors, and fashionable points, to the neglect of others relating immediately to the usefulness of the matured cow. Some men will have all their herd of one color, or must have particular markings in certain situations, and if a cow is of a certain roan tint they will forgive her being a bad milker and not worth her salt, or perhaps they never trouble to inquire, and do not know how worthless she is for the purpose for which she is supposed to be


PEDLAR'S "GEORGE" SHINGLES
Everywhere facts prove the menace of lightning.
Once you realize that the danger of lightning lies in its concentrated action on a single spot in your roof, you will appreciate the safety and protection of a Pedlarized roof. Pedlar's "George" Shingles lock together on all four sides, forming a single sheet of metal from eave to ridge. Lightning cannot concentrate on any single spot, for Pedlar Shingles spread it over the whole surface of your roof. When properly grounded, a Pedlarized roof is practically indestructible. This summer know the saving and peace of mind of a safe, steel roof by Pedlarizing now with "George" Shingles. Write for the "Right Roof" Booklet M F
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For Every Kind of Shooting—
whether it be moose, bear, rabbits, ducks, partridge—at the Traps or on the target range—the selection of the proper Shot Shell or Cartridge for each purpose goes a long way toward producing the best results.
Dominion Shot Shells and Metallics
are made in sizes that operate perfectly in all popular makes of shot guns and rifles. The exact proportion of powder and shot in Dominion loading gives the shooter Ammunition that hits hard and stops what it hits.
The big "D" trade mark on a box of Cartridges is your guarantee of accurate, speedy, well balanced, Canadian Ammunition. Twice the price won't buy better.
Send for free colored hanger "A Chip of the Old Block."
Dominion Cartridge Co., Limited,
635 Transportation Building, Montreal.
DOMINION HAND TRAP

A PROMINENT P. E. I. STOCK BREEDER LURED BY THE WEST

The name of Fred Clark, of Victoria, P. E. I., the prominent breeder and exhibitor of Holstein cattle, is a household word with readers of **The Maritime Farmer.** He and his neighbor, W. M. Lea, with whom he co-operated in breeding and exhibiting under the firm name of Lea & Clark, have been two of the most successful dairymen in the Maritime Provinces.

We are sorry to announce that Mr. Clark has sold his farm and has taken up his abode in Winnipeg, where he hopes to find a good market for his black and whites and a remunerative sale for milk and cream.

Fred's stock will be a good advertisement in the West for Maritime Province cows. He has already been asked to come East and purchase some 200 head of two-year-old heifers for a large ranch near Winnipeg. During the last month he has taken three carloads of cattle from Prince Edward Island, and as soon as the weather gets a little cooler the balance will be purchased and taken West.

So while we are sorry to lose Mr. Clark from our midst we feel that he will boost Eastern stock for all he is worth.

George Callbeck, of Summerside, who accompanied Mr. Clark with his shipment of cattle, on his return trip paid **The Maritime Farmer** a friendly call. George is a hustling, wide-awake, typical young Islander. While he liked the West pretty well, he says P. E. Island is good enough for him. Callbeck's Yorkshire Swine are becoming pretty well known not only in Canada but also over in the United States. Good judges of swine claim that the Callbeck strain of Yorkshires is second to none in Canada, and consequently the demand for their young stock exceeds the supply. We have heard one judge say that the Callbeck herd contains the most typical Yorkshire sow in all Canada. They have been offered fancy prices for her, but they have refused to part with her, as they consider she is worth more to them as a tried and true breeder than any monetary consideration they might be induced to accept in exchange.

THE N. B. F. & D. A. EXCURSION

As announced on another page of this issue, a mid-summer meeting of the New Brunswick Farmers' and Dairymen's Association will be held on the Experimental Farm, Fredericton, N. B., on August 23rd. Excursion parties are expected to come from all parts of the province. Buy a single-fare ticket for Fredericton, and when doing so do not fail to ask for a Standard Certificate. At Fredericton you will receive in exchange for this Standard Certificate, after it has been duly signed by the secretary of the New Brunswick Farmers' and Dairymen's Association, a free ticket for the return trip.

Take a day off with your wife and family, and spend a pleasant, profitable day at the Experimental Farm with your neighbors and fellow farmers from other sections of the province. You will have ample opportunity to inspect the splendid farm buildings, live stock, implements, and the methods followed in the field, garden, orchard, and dairy.

You will see ideals which it will be well worth your while to pattern after, and be assured that the closer you can follow them, or improve on them, the greater will be the profits from your operations.

Dinner will be served free on the farm to the excursionists.

Interesting addresses will be delivered by prominent agriculturists, and you will be free to ask as many questions as you like.

"Metallic" Ceilings

and wall plates make very handsome, easily cleaned, fire retarding [illegible]. Splendid for home, church, school, etc. Fit up one room and see how you like it.

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TRIBUTE TO THE HORSE

"Here's to that bundle of sentient nerves, with the heart of a woman, the eye of a gazelle, the courage of a gladiator, the docility of a slave, the proud carriage of a king, and the blind obedience of a soldier; the companion of the desert plain, that turns the moist furrows in the spring in order that all the world may have abundant harvest, that furnishes the sport of kings, that with blazing eye and distended nostril fearlessly leads our greatest generals through carnage and renown, whose blood forms one of the ingredients that go to make the ink in which all history is written, and finally, in black trappings, pulls the proudest and the humblest of us to the newly sodded threshold of eternity."

GAS ENGINE DON'TS

Don't attempt to run an engine without providing sufficient lubrication.

Don't over-oil the engie. Just enough

Don't over-oil the engine. Just enough in the right place is better than a quart.

Dont' use common black oil on small bearings. Such oil is not suited to the purpose.

Don't screw a spark plug on too tight. It may "bake" fast. Graphite, if available, should be used on the thread.

Don't put gasoline into the tank without straining it through a chamois. There may be water in the gasoline, or some sediment that would clog up the carburetor or fuel pipe.

DRILL FOR LEATHER PUNCH

The ordinary automatic awl will be found a very useful article to take the place of a leather punch and to aid in punching holes in leather. As there is usually different sizes of teeth with the drill, different sized holes may be made. It will be found much easier to make a hole in thick leather such as traces, with this tool than the ordinary leather punch of the farmer, and will take the place of it when the punch may happen to be mislaid.

It never pays to use a cheap lantern. During recent years the desire for underselling has resulted in the sale of a alntern whose burner, instead of being securely screwed on the oil reservoir, is merely slipped on. As a consequence, if the lantern is upset the burner comes off and the oil is allowed to run out upon the lighted wick. The result is either an explosion or a serious blaze, and unless speedily checked damage to life and property. One part of the farm equipment that ought always to be safe is the lantern.

TAKE A DAY OFF
Between Haying and Harvesting

Visit the Experimental Farm Fredericton, N. B., on

Wednesday, August 23rd.

A Mid Summer Meeting of the N. B. Farmers' and Dairymen's Ass'n will be held there on that date

Experts will be on hand to talk on various branches of the work right in the open.

Bring Your Wife and Family

A. R. WETMORE, Secty., Clifton, N. B.

Excursion Rates--A Single Fare on the Standard Certificate Plan.

Dinner will be Served on the Grounds FREE To Everybody.

GEO. E. FISHER, Pres., Chatham, N, B.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Oattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C. A. Archibald, Truro, N. S.

Yorkshires.

R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BEE ! BEES !

We offer for sale several colonies of Bees in first-class condition and warranted free from disease.

CRAIG BROS.
Amherst Nova Scotia

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

DON'T WAIT

until you are ready to set a hen or incubator before you send for our mating list. We have orders booked ahead now. Get yours in.
Our mating list is waiting for you.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.
E. L. Colpitts, Petitcodiac, N.B.

BREEDERS FOR SALE

We offer a number of good breeding cocks and hens in Barred Rocks, White Wyandottes, and White Leghorns at about meat prices.

Must reduce stock to make room for young stock.

ORCHARD HILL FARM
Brown's Flats, N. B.

MAXIMUM PRICES FOR HAY AND STRAW FIXED

The following maximum prices, taken from a recent issue of the London Morning Post, have been fixed by the Army Council for hay, oat straw, and wheat straw of the 1916 crop in England and Wales:

Hay, 6£; oat straw, £3 10s.; wheat straw, £3 per ton, on the conditions that the Forage Department bale or truss and the vendor delivers to certain ports or troop centres. This will enable the vendor whose produce is close to the particular port or troop centre to obtain the advantage of proximity value. Where the vendor consigns his produce by rail he will not be charged with railway freight in excess of 10s. per ton.

In cases where the railway freight is 10s. per ton or more the prices actually received by the vendor will be £5 10s. per ton for hay, £3 per ton for oat straw, and £2 10s. per ton for wheat straw, on condition that he carts the produce to rail.

Where forage is not lifted until after December 31, 1916, the following additional payments will be made irrespective of the date of purchase:

Lifted druing January, 1917—2½ per cent of purchase price.

Lifted during February, 1917—5 per cent of purchase price.

Lifted during March, 1917—7½ per cent of purchase price.

Lifted during April and after—10 per cent of purchase price.

When desired, an advance of 50 per cent of the purchase price will be made within fourteen days of the purchase.

Interest at the rate of 5 per cent per annum will be paid from October 31, 1916, to the date when the final bill is sent for signature, upon all amounts remaining due upon the purchase.

All hay must be insured against fire by the vendor.

The maximum prices at which hay or straw of the 1916 crop shall be purchased from the producer by hay merchants and others shall not exceed £5 10s. per ton for hay, or £3 per ton for oat straw, or £2 10s. per ton for wheat straw (including delivery to rail by the vendor, but exclusive of the cost of baling or cutting and tying), and the maximum prices at which hay or straw shall be resold to the consumer, delivered onto his premises, shall not exceed £7 10s. per ton for hay, £4 10s. per ton for oat straw, and £4 per ton for wheat straw.

EXCURSION TO EXPERIMENTAL FARM

The New Brunswick Farmers' and Dairymen's Association will hold a monster agricultural excursion to the Experimental Farm in Fredericton on August 23rd, the executives of the association having reached that decision at a meeting held in Fredericton on July 26th in the provincial agricultural offices. Arrangements are now under way to have an excellent programme prepared. Hon. J. A. Murray, Minister of Agriculture, is to be one of the principal speakers, and experts from the experimental farm at Ottawa will discuss various agricultural problems.

The idea of this excursion was discussed at the last session of the Farmers' and Dairymen's Association, but it was then suggested that a two days' mid-summer meeting be held at the experimental farm between haying time and harvesting. Now, however, it has been decided to run the excursion and allow all farmers of the province to spend one entire day at the experimental farm.

President C. E. Fisher, of Chatham; H. H. Smith, of Hoyt Station; N. W. Eveleigh, of Sussex; A. R. Wetmore, of Clifton; and Superintendent W. W. Hubbard, of the experimental farm, attended the meeting.

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Affiliated with the UNIVERSITY OF TORONTO.

College will reopen on

MONDAY, OCTOBER 2nd, 1916

Calendar on Application.

E. A. A. GRANGE, V. S., M. S., Principal

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Two registered Durham Bulls.—STUART DODGE, Melvern Sq., N. S.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT, Toledo, Ohio.

PORTRAIT AGENTS WANTED.—Send for catalogue. Solar and bromide prints, portraits flat and convex, frames and war pictures.—MERCHANTS PORTRAIT CO., Toronto.

SALESLADIES WANTED to fill positions open on our sales staff made vacant by men enlisted. Either temporary or permanent. Income three dollars per day upward. Address THE SCARBOROUGH CO. OF CANADA, LTD., Map Publishers, Hamilton, Ontario.

Jersey Bull for Sale !

A fine Jersey Bull, well grown, of excellent breeding, will be sold very reasonable. 15 months old.

SARAH E. MOSES SMITH,
Woodward's Cove, N. B.

DATES TO REMEMBER

N. B. F. & D. A. EXCURSION TO EXPERIMENTAL FARM
Fredericton, N. B.
August 23, 1916

INVERNESS COUNTY EXHIBITION
Inverness, N. S.
September 5 and 6, 1916

CHARLOTTE COUNTY EXHIBITION
St. Stephen, N. B.
September 12, 13, 14, and 15, 1916

HALIFAX EXHIBITION
Halifax, N. S.
September 13 to 21, 1916

CHARLOTTETOWN EXHIBITION
Charlottetown, P. E. I.
September 26-29, 1916

YARMOUTH COUNTY EXHIBITION
Yarmouth, N. S.
October 4, 5, and 6, 1916

SYDNEY EXHIBITION
Sydney, N. S.
October 3-6, 1916

IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARI-

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, AUGUST 29, 1916. Number 22.

Pure Bred Cow Will Give Greater Profit Than Grade

A Certain Element of Refinement Always Follows the Breeding and Rearing of Pure-Bred Live Stock.

A pure-bred cow is a cow that has sire and dam recorded, with number and pedigree, in the herd book of her particular breed. This cow is eligible upon payment of a small sum to have her name, those of her sire and dam, date of birth, the name and address of her breeder, placed in the herd book. When the name is entered in registry the cow is given a serial number which follows the name when written and a certificate of registration is issued her owner.

The term "thoroughbred" is frequently and erroneously used as synonymous with "pure-bred." Thoroughbred is a running horse. It is a specific name, just as Percheron, and its use in connection with any other breed of live stock is incorrect.

A grade cow is a cow which has fifty or more per cent of the blood of one breed. For example, the offspring of a pure-bred Holstein bull and a cow of mixed breeding.

A scrub cow is a cow of mixed breeding, no one blood predominating—that is, less than fifty per cent.

A high-grade cow is a cow resulting from several successive crosses. Starting with a scrub cow, after five successive pure-bred crosses the offspring would be thirty-one thirty-seconds pure and would be termed "high-grade." In some horse registration books such an animal is eligible to registry, but with cattle such is not the case. These high-grades, although practically the equivalent of pure-breds, lack the prepotency and the ability of the latter to transmit to their offspring uniformity of type and performance.

There are two chief sources of revenue from a herd of dairy cattle, writes M. R. Shafer, in Farmer's Review, namely, milk production and sale of cattle for breeding purposes. Of these two, the first is by far the more important, milk production being the ultimate use of all dairy cows. It is true that many breeders make very good profits rearing cattle to sell for breeding purposes alone, paying very little attention to the sale of the dairy produce of their herd. However, considering the large number of dairymen who supply the milk consumers of our large cities, the creameries, the condenseries and the ice cream factories, the cattle breeding industry is a mere drop in the bucket as compared to that of milk production.

The sphere of the grade dairy cow is confined to milk production. Her whole value is measured by her performance at the pail. With the pure-bred cow this is not true. Besides her value as a milk producer, this pure-bred cow is capable of producing a calf for which there is usually a ready market at a price four or more times as great as the price commanded by the calf from a grade cow of apparently equal quality.

In comparing pure-bred and grade dairy cows in regard to milk production many complications arise. On the average dairy farm the grade is by far the most popular cow. Yet we believe, and rightfully so, that the pure-bred is a larger and more economical producer than the grade. If this is not true, then all the toilsome years of striving toward the ideal are of no account. Surely the dairy animal, which represents the effort of the most careful breeders and students of breed selection, is on the average a better cow than the one that just happened and whose ancestors are unknown.

There are poor pure-breds as well as grades, and good grades as well as pure-breds. To determine the value of type, the Connecticut Station conducted an experiment, using two pure-bred Guernseys, one of the strict dairy type and the other of the "mongrel" type, and two grade cows of similar types. The good pure-bred cow returned a net profit of $22.17, while the poor pure-bred gave a profit of $1.86. The good grade cow produced 1,000 pounds of milk and 86 pounds of butter fat more in a year than did the poor type grade.

This same station conducted an experiment on pure-bred and grade dairy cows. Fourteen grades and eleven pure-breds were used. For the year the pure-breds averaged 5,811 pounds of milk against 5,522 pounds for the grades. Of the twenty-five cows, four were kept at a loss; three of these four were pure-breds. These experiments show that a pedigree is not a guarantee of dairy quality. The difference between pure-bred cows of the same breed is very great. A pedigree should be considered only as an assurance of pureness of breeding. The scales and Babcock tester, with accurate feed records, are the only proof of quality.

The New Jersey Station conducted a rather unique experiment to determine the effect of feed on amount of milk produced. Four cows were selected for this experiment. No. 1 and No. 2 were fed a good dairy ration, while No. 3 and No. 4 were fed a non-nutritive ration. At the end of thirty days the rations were reversed for the same length of time, No. 1 and No. 2 being fed the poor ration, and No. 3 and No. 4 being feed the good ration. Due to the change of feed, cow No. 1 decreased 11.2 pounds and cow No. 2 decreased 3.5 pounds of milk a day. Cow No. 3 gained 3.3 pounds and cow No. 4 increased 5 pounds of milk per day. The nutritive ration produced 687 pounds more milk and 31.47 pounds more butter fat than the poor ration. Data from this experiment shows that it is more profitable to keep twenty cows, feeding them a good dairy ration, than to keep twenty-five cows feeding them a poor ration. This evidence that feed is of first importance and that in order to get the most profitable returns from a dairy herd the most nutritive balanced rations must be fed.

The possibilities of grading up an average herd by the use of pure-bred sires are very great. No dairyman who keeps ten or more dairy cows, either pure-breds or grades, can afford to be without a good pure-bred bull at the head of his herd. No man should expect to succeed in up-grading a dairy herd by using a grade bull. The pure-bred sire has prepotency and the ability to transmit to his offspring the inborn tendency to milk and butter fat production. This the grade bull does not have, most assuredly not with so great a degree of uniformity as the pure-bred bull. A good bull must be able not only to get a few high producing daughters, but transmit his dairy tendencies to a large percentage of his offspring. Money spent for this kind of a bull is indeed well spent.

Unless backed up by considerable capital the man starting into the dairy business cannot afford to purchase all pure-bred animals. In most cases this would be unwise. The averafe beginner will find it more profitable to purchase a larger number of good grade cows than a few high-priced pure-bred ones. Buy a suitable number of good grade cows. The $100 cow is usually cheaper than the one that can be bought for $60. Put a good pure-bred sire at the head of this herd. Money spent for a bull is usually well spent, for he is at least one-half the herd. Do not be afraid to put considerable money in a good sire, but be sure that you buy from a reliable breeder. Buy one or two good pure-bred cows, preferably in calf by some good bull. Again do not be too economical, for these cows are the foundation of your herd to be. By keeping all heifer calves and by an occasional purchase the grade herd can be gradually transformed into an all pure-bred herd with a comparatively small outlay of capital. No dairyman should be satisfied with a grade herd, but do not rush it too rapidly. Use judgment.

The fundamental reason for keeping a dairy herd is the profit which it returns. A few are kept for pleasure, but these need not be considered. Since profit is the fundamental reason for dairy cattle, in choosing between a pure-bred and a grade herd it would be well to compare the profits returned by the average high grade and the average pure-bred cow. This is attempted in the following table:

Grade	
Capital invested $100.00	
Interest and depreciation 10 per cent	$10.00
Cost of feed 1 year	75.00
	$85.00
300 lbs. butter fat at 30 cts.	90.00
Profit	$5.00
Value of calf	25.00
Profit with calf	$30.00
Pure-bred	
Capital invested $250.00	
Interest and depreciation 10 per cent	$25.00
Cost of feed 1 year	75.00
	$100.00
300 lbs. butter fat at 30 cts.	90.00
Loss	$10.00
Value of calf	75.00
Profit with calf	$65.00

Note.—Labor was considered to be offset by the value of fertilizer produced in each case. Service of bull, which would be practically the same in each case, was not taken into account.

Here we have the whole question in a nutshell. Not considering the value of the calf, the profit of the grade cow is $5.00 per annum, while the pure-bred cow is kept at a loss of $10.00. Many dairymen who keep grade bulls realize no profit from their calves. Considering the grade calf to be worth $25.00 and the pure-bred to be worth $75.00 at six months of age, we have a profit on the grade cow of $30.00 per year and on the pure-bred cow a profit of $65.00 per year. The calf is the determining factor; without it dairy business would be a failure. Considering the ready market for young pure-bred stock, the pure-bred dairy business would be a failure. Considering the ready market for young pure-bred stock, the pure-bred cow is a more profitable investment than the grade cow.

In the show ring there is little comparison between the grades and pure-breds. The grade cow is not eligible to the ring in the larger shows, and if she were the competition of the well-bred registered cow would be too severe. The show ring is in reality a side issue to the breeding and rearing of pure-bred dairy cattle. The premiums are scarcely ever more than sufficient to defray the expenses of the exhibition. Pleasure and advertisement are the only returns of the show ring.

Profit is the fundamental reason for keeping a dairy herd. We have shown that the profit from a pure-bred cow is greater than that from a grade cow of

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Importance of Road Maintenance and Repair

By Ralph G. Carter

There is no phase of the road problem more important than that of maintenance. The general impression that there are certain types of roads that are permanent is erroneous. No permanent road has ever been constructed, or ever will be, according to the road specialists. The only things about a road that may be considered permanent are the grading, culverts, and bridges. Roads constructed by the most skilful highway engineers will soon be destroyed by the traffic, frost, rain, and wind unless they are properly maintained. But the life of these roads may be prolonged by systematic maintenance. A poor road will not only be improved by proper maintenance, but may become better in time than a good road without it.

Keep Surface Well Drained

The first and last commandment in earth road maintenance is to keep the surface well drained. To insure good drainage the ditches should be kept open, all obstructions removed, and a smooth crown maintained. Except for very stony soil the road machine or scraper may be used very effectively for this work. The machine should be used once or twice a year, and the work should be done when the soil is damp, so that it will pack and bake into a hard crust. Wide and shallow side ditches should be maintained with sufficient fall and capacity to dispose of surface water. These ditches can in most places be constructed and repaired with a road machine.

Hard and Slow Work with Horses

Even under the most favorable conditions, work with a road machine or scraper is slow and difficult for horses, and under many conditions almost impossible; besides, so many horses are required to operate a grader that they are unwieldy in a narrow road and very difficult to manage. Then, too, in the spring of the year, when the work of the roads should be done, teams as well as men are at a premium, as the farmers are busy in the field and have no horses or men to spare.

Doing the Work at the Right Time

The all-important thing in road building and in maintaining good ones is getting onto the roads when the dirt is in just the right condition—doing the work a day or so late makes the work harder and less effective. With a tractor, roads can both be built and kept in excellent shape because of the fact that weather conditions can be immediately taken advantage of and the work completed before the roads become dry and hard.

All vegetable matter, such as sods and weeds, should be kept out of the road, as they make a spongy surface, which retains moisture. Clods are also objectionable, for they soon turn to dust or mud, and for that reason roads should never be worked when dry or hard. Bowlders or loose stones are equally objectionable if a smooth surface is to be secured.

Using the Drag to Advantage

A split-log drag or some similar device is very useful in maintaining the surface after suitable ditches and cross section have once been secured. This drag can also be used to advantage on a gravel road as well as on an earth road. The principle involved in dragging is that clays and most heavy soils will puddle when wet and set very hard when dry.

In dragging roads only a small amount of earth is moved, just enough to fill the ruts and depressions with a thin layer of plastic clay or earth which packs very hard so that the next rain instead of finding ruts, depressions, and clods in which to collect, runs off, leaving the surface but little affected.

The drag should be light and should be drawn over the road at an angle of about 45 degrees. One round trip, each trip straddling a wheel track, is usually sufficient to fill the ruts and smooth the surface. If necessary the road should be dragged after every bad spell of weather when the soil is in proper condition to puddle well and still not adhere to the drag. If the road is very bad it may be dragged when very wet and again when it begins to dry out. A few trips over the road will give the operator an idea as to the best time to drag. Drag at all seasons, but do not drag a dry road.

The slope or crown of an earth road should be 1 inch to the foot. If the crown becomes too high it may be reduced by dragging toward the ditch instead of from it. If the drag cuts too much shorten the hitch and change your position on the drag. If it is necessary to protect the face of the drag with a strip of iron it should be placed flush with the edge of the drag and not projecting. A culling edge should be avoided, as the main object in dragging is to smear the damp soil into position.

Notwithstanding the fact that road drags have been widely used, there are very few reliable data available which relate to the cost of drag maintenance. Furthermore, most of the data which have been collected are difficult to interpret, because of the fact that they do not usually furnish sufficient information concerning the character of the surface maintained or the prevailing climatic and traffic conditions to warrant any very general deductions. Sufficient is known, however, to warrant the unqualified statement that no cheaper method than dragging has ever been devised for maintaining the types of roads for which the drag is adapted.

The cost of constructing a satisfactory road drag varies from about $2, when a plit-log drag is used and all materials are conveniently available, to perhaps $10 or $12 when the drag is made of first-class sawed lumber, neatly finished in every detail, and painted. This item of first cost appears almost insignificant when it is considered that the life of a well-constructed road drag should be at least three or four years.

The cost of operating a drag varies, of course, with the cost of labor and power. Accurate data has showed that under favorable conditions a road could be dragged at the rate of about one mile per hour. This was where the road was comparatively well shaped and only one trip in each direction was necessary. Where more trips of the drag were required the rate was, of course, correspondingly diminished.

The Draft of Plows--

By Prof. J. Macgregor Smith

University of Saskatchewan, Saskatoon

Do you know how much power it takes to pull your plow, or any other farm implement, for that matter? In any manufacturing plant careful records are kept of the amount and cost of the power required to run the machinery. This cost is very closely watched so that the work is done as ecnomical as possible, thus keeping operating expenses at a minimum. Why should not farmers keep the same careful check on operating expenses? If it pays manufacturers it will pay farmers, who are also manufacturers. As outlined in this article, municipalities could profitably invest in a dynamometer to be used at the plowing matches which ought to be held in every locality. Every pound saved in draft is as good as a pound earned, and all reasonable economy is the duty of every true citizen.

The plow having been brought to its present standard of perfection, we find ourselves, not so much perhaps from humane motives as from a sense of financial loss through wasted powers, studying this interesting topic: the draft of plows.

The tota draft will be influenced by numerous factors, including shape of moldboard; condition of plow, sharpness of shares and scouring qualities; various adjustments; character and condition of the soil; presence of various attachments, coulters, gauge wheels, etc.; size of furrow; weight of plow and angle of the line of draft.

According to Sanborn, "the plow shows the lightest draft when set to cut the widest furrow of which it is normally capable." This is probably accounted for by the remarkable results of an experiment at the Utica trials, which showed that 55 per cent of the draft of the plow was caused by the cutting of the furrow slice, 35 per cent by friction of the sole, and only 10 per cent by the work of lifting and turning the furrow. The average draft of a number of plows running in the empty furrow was 168 lbs. The whole draft was 476 lbs., and the draft with the moldboard removed 434 lbs. The difference between 168 lbs. and 434 lbs. was taken to be the draft required for cutting the furrow slice. Sanborn states later that 42 per cent of the draft is used by the share and landslide, and another writer puts the moldboard friction at only 2 per cent. These figures will not hold for all conditions, but even an approximate idea of the division of draft explains many frequently observed facts.

Small Cutting Edge

In relation to the size of the furrow the cutting edge should be as small as possible. A furrow 4x12 inches has a line 16 inches long which must be cut, and an area of cross section of 48 square inches, a proportion of 1 to 3. One 6x14 inches has a cut surface of 20 inches and an area of 84 square inches, a ratio of 1 to 4.2. The larger the furrow cut, therefore, the less the influence of the cutting edges on each square inch of cross-sectional area, which is a commonly accepted unit of comparison. Sanborn found a constant decrease in draft per square inch as the furrow was deepened and widened up to the normal capacity of the plow. When made to cut wider, narrower, shallower, or deeper than the adjustments of the plow ordinarily permitted there was an increase in draft of 15 to 20 per cent, much harder work for the plowman, and a poorer quality of plowing.

Long Hitch or Short Hitch?

"Does a plow with a long beam pull harder than one with a short beam? I have heard it claimed that it does."

On the contrary, a long hitch to a plow will make it pull some easier than a short hitch. A plow is different in this respect from a log or a wagon. Here a short hitch causes the horse's tugs to have a lifting effect on the load, which tends to keep it from digging into the ground, which helps to lighten the pull. But when the horses' tugs pull on the beam of a plow it tends to lift the plow out of the ground and something must overcome this lifting or the plow will not stay in the ground.

If the "suck" of the plow nose is not strong enough to overcome this lifting action of the tugs, then you must set the beam clevice or lift on the handles enough to overcome it. This is setting one force to overcome another, and that always means lost energy.

Tests made at one of the agricultural experiment stations showed that hitching a nine and a half foot chain between the end of the plow beam and the evener made a saving of 6 per cent in the draft of a fourteen-inch walking plow, while a thirteen and a half foot chain made a saving of 8 per cent in the pull. You see, when you increase the length of the hitch you decrease the lifting action of the tugs, and so reduce this energy that is lost in overcoming that lifting action. The line of pull from the point of the horses' shoulders to the center of the load of the plow should be as nearly parallel with the bottom of the furrow as is practicable.

The power absorbed in severing the furrow slice demands that shares be not only sharp but properly sharpened. Sanborn reports a difference of only 6.7 per cent in favor of an old point resharpened over a dull point on the same plow, but an advantage of 36 per cent in favor of a new point over the old point resharpened. At all events, farmers should not waste power on dull shares. The Winnipeg motor contests have shown a difference of almost 50 per cent in the draft of different makes of plows plowing the same depth and width of furrow in the same land. Is this not worth consideration? But to get to the point in a practical way: How much does it take to pull your plow—400 lbs. or 2,000 lbs.? If this question were asked at a meeting of practical men, answers would be given covering even a wider range than the figures suggested above.

Test the Draft of Plows

There is no better incentive to better farm practice than an active interest in plowing matches. There is a splendid opportunity afforded at such a gathering to demonstrate some important factors in the operation of our most important implement—the plow. When a man is between the handles of a walking plow he carefully adjusts it to work as easily as possible; but he sometimes forgets when he is sitting on a bag of hay on a sulky, and his horses suffer. If too little power is supplied the teams lose in condition, or, worse still, the quality of the work done is lowered.

A municipality might very profitably purchase a dynamometer (it is simply a strong spring balance) and loan it to any man at a nominal fee. This is not an extraordinary proposal, and the writer has had this suggestion made to him by several farmers. If this is not possible, arrangements should be made to have the agricultural colleges supply demonstrators to test the plows right in the field. Seeing is believing, and one practical dem-

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N. B. Farmers Enjoy Field Day at Provincial Experimental Farm.

President George E. Fisher and the other officers associated with him in the management of the New Brunswick Farmers' and Dairymen's Association conceived the idea that it would be a good plan for the association to conduct farmers' excursions from various parts of the province to the Experimental Farm at Fredericton. Arrangements were made for the excursionists to meet on the same day at the Experimental Farm and there view the transformations that are taking place to make what is destined to be one of the finest experimental farms in the Dominion. There they could see crops grown under the most modern methods, and although perhaps each and every farmer in the assemblage may not be able to do things just as they are done at Fredericton, yet the ideals are there, and it is well for everybody to strive for the highest possible ideals. It may take some time to get there, but "every time a little," the good old farmer's motto, is sure to bring success.

The attendance on the 23rd inst., when the excursion was held, was just about twice as large as was anticipated. Over 1200 farmers, their wives, and children came and enjoyed the outing. Old friends were met and new ones made. The Farmer representative saw many of our readers while there. It was interesting to note the conversations carried on by small groups as they wandered hither and thither to the various points of interest about the farm and compared experiences.

After the inspection of buildings and field crops, W. W. Hubbard and his efficient staff saw that the wants of the inner man were satisfied with a good substantial dinner, which was no small task, and for which they deserve every credit.

After dinner was served President Fisher addressed the audience. He told them what the New Brunswick Farmers' and Dairymen's Association's aims and objects were, and referred to the officers' wish to see the membership list recruited to fully 1000 strong for next year.

W. W. Hubbard spoke of the work that is being accomplished at the Experimental Farm, and the real value it should, and will, be to the farmers of the province when schemes now under contemplation are carried out.

Mr. J. H. Grisdale. Director of Dominion Experimental Farms, outlined the work of the various farms and stations under his supervision. He urged the farmers to keep in touch with the work that is being accomplished. Large sums of money are spent each year on the development of these farms and the testing, trying, and proving of cultural methods and comparative yielding value of various varieties of seed, all with the main object that the farmers of Canada may be informed at the minimum cost to themselves of the most up to date and profitable methods to adopt in their occupation.

Prof. E. S. Archibald, Dominion Animal Husbandman, gave an excellent demonstration in live stock, using the stock on the farm as illustrations.

Mr. G. C. Cunningham, Provincial Plant Pathologist, gave an excellent address on potato diseases, which was very much appreciated. The subject of combating and controlling potato diseases is receiving a great deal of attention, and it behooves potato growers to heed well the warnings and information sounded and distributed by Prof. Cunningham and the various experimental farm reports, bulletins, and pamphlets.

We believe the success attending this initial attempt to hold a farmers' field day at the Experimental Farm warrants the institution of such a day as an annual event.

Selecting Bull to Head a Herd no Easy Matter

If the expression so often made use of by breeders of pure-bred animals—that "the sire is one-half of the herd"—is true, and I believe that it is, the importance of selecting that sire must impress itself forcibly on the prospective buyer. Many mistakes have been made in these selections in the past, and without doubt many more will be made in the future, not alone by the beginner in the breeding of pure-bred stock, but by those who have devoted the greater part of their lives to trying to produce something better.

Where the purchase of a pure-bred sire means placing him at the head of an established herd of pure-bred matrons, should a mistake be made it is impossible to estimate the loss which the purchaser must sustain. No breeder of pure-bred animals would be short sighted enough to continue to keep at the head of his herd an animal whose offspring proved to be below the standard which he has been for years striving to attain. To do so would be suicidal to his own best interests, not only financially, but to his reputation as a breeder and judge of the stock he is producing. The financial loss would be far more easily recovered than the loss of confidence his customers would have in him were he to continue in service a sire whose offspring proved faulty.

The experienced breeder of pure-bred stock needs no instruction in the matter of selecting a sire. He is quite familiar with blood lines, should be a competent judge of individuality, and knows the weak points in his herd which he is striving to strengthen. To this it is an added fact that he has an acquaintance with other breeders which is valuable to him at a time when the new sire is needed. Possibly he knows teh individuals in other pure-bred herds almost as well as his own, and often watches the development of one or more young things in other herds up to a time when he is fully satisfied that all he has to do is to make the purchase, having fortified himself against possible mistake as fully as it is possible to do. In a case of this kind it is no fault of either the producer or purchaser if the sire does not fill all hoped for requirements, and it is simply a matter of not "nicking," that mysterious something which makes a sire a failure in one herd and a splendid success in another.

To the Inexperienced

With the novice or new beginner the situation, however, is entirely different unless he has been so situated that he has had ample opportunity to become familiar, not alone with the breeding of pure-bred stock, but with the feeding as well. He is quite liable to make a mistake in the selection of his first pure-bred sire. The possibility of making this mistake will, however, be greatly lessened if he is fortunate enough to make his initial purchase from a breeder who will conscientiously try to sell him what he should have rather than what he (the beginner) might wish to buy, owing to more pleasing appearance caused by higher condition, or special fitting for show purposes, color, etc.

I have felt for years that the breeders of certain classes of pure-bred stock, principally the beef breeds of cattle and different breeds of heavy horses, have not always acted toward their customers in a manner that was best for either in the matter of preparing their young sires for sale. Not all breeders are guilty, but many are, of the practice of forcing the young things to a point where it cannot but impair their future usefulness. You may say that every one is familiar with the fact that nurse cows and forced feeding are practiced, and should protect themselves in buying. I have attended the leading fairs for many years, and have never failed to find the nurse cows in evidence, or to have heard not onyl few, but many, ask why such thin or poor cows were at a fair, not knowing that many of the young things up to twelve and fourteen months old, which they so greatly admired, were indebted to these thin cows for much of their attractiveness.

Relative to the colts, and even older horses among the draft breeds, how many back on the farm know that muc hof the fat and attractiveness of young stallions they see at our fairs is produced by feeding four times a day—not simply the hay and oats with which they are quite familiar, but in addition to this syrup, flaxseed meal, alfalfa meal, sugar beets, carrots, boiled barley, and in fact anything which will produce fat and growth; this feeding will produce attractiveness, but not usefulness.

To the beginner I would say: Do not attempt to buy the overfat sire; rather select the sire with symmetry of form, attractive enough while thin to be pleasing. If possible, see both sire and dam of the young sire you are contemplating purchasing, and if possible to do so see the ancestors even farther back than sire and dam. If these are pleasing to you there can hardly be a dwoubt of the fact that his offspring will also be satisfactory. Buy from reputable breeders and dealers. Tell them as nearly as you can of what you are in need to improve your herd. Buy only young animals which will with care improve in your hands. If your breeding animals are light boned and perhaps undersized buy increased bone and size in your sire. On the other hand, if your females are inclined toward coarseness, buy more refinement in your sire. remembering always that masculine character must present itself in the successful sire.

Spend a week or two visiting the breeders and their herds. You will find in the years to follow that the time was well spent, and the breeders will be found only too willing to answer all questions which are of mutual benefit and from which the prospective purchaser will glean much valuable knowledge.—F R. Shaw, in Ottawa Valley Journal.

Oat Hay a Fine Dairy Feed

For years I have made it a practice to remove the oats from the field about the time the grain is passing from the "milk" to the "dough" stage of growth, using the crop for hay.

This usually can be done in early July. If the oats are left to stand longer there will be more grain, but the feed value—the palatable succulence of the stems and blades—will have been forfeited during the ripening process; there will be very little real nourishment contained in the product.

In curing this oat hay one must remember that, while the curing is very necessary, it is easily carried to extremes, in which case the greenness of the growth renders it peculiarly susceptible to the "cooking" action of the sun, and a great amount of the best part of the feed will be absorbed, while the product will be brittle and difficult to handle in stacking or mowing away.

A little practice will enable one to tell when the oat hay has cured sufficiently. It should not be quite as dry as ordinary meadow hay when raked. I rake it into wind-rows as soon as it cures, and put it into shock as quickly as possible. Sweep-rake harvesting, either from the swath or wind-row, is not advisable, as so much of it will overcure in this case.

Oat hay will keep well in outdoor stacks, but they ought to have a top of slough grass or other coarse meadow grass, to start the water off. I have realized best results, however, by storing it away in the hay mow. Of course, one can have the oats bound, and they will be fine to handle in feeding out during the winter months, but one must be careful not to get the sheaves too large or bound too tightly, which might induce mold.

I have found oat hay a splendid dairy feed, the milky consistency which is stored away in the grain being especially conducive to a heavy milk flow. It requires very little other grain or mill feeds in conjunction with it. For horses and stock cattle, and especially for sheep, it is excellent, no grain whatever being required with it. It is particularly adapted to raising young stock—calves, colts, and lambs—the elements contained in it being most conducive to the promotion of bone and muscle growth.

As soon as the oats are removed from the field I re-stir or thoroughly disc the ground. I may add that I have been delayed in doing this as late as July 29th, and the plan worked at that period. On this slightly rough surface, without harrowing, I sow some sort of seed for producing another crop. This is let stand till fall, when it is mown for hay, or if it seems rather late for it to make hay I utilize it for pasture. In either case it proves a valuabe crop, and it will not drain the soil of any more vitality than the growth of weeds which usually springs up after harvest and infests oat fields.

The first season I ever tried this plan I sowed the oat stubble to a mixture of oats, millet, and corn (two pecks of millet seed, a peck of oats, and a half peck of corn to the acre).

This made a growth as high as one's waist, and made some fine roughage for winter feeding. I used it along with the oat hay which had been removed from the land. Since that I have tried various mixtures for this second cropping. The last one I employed consisted of about two pecks of millet, about the same amount of cane seed, and a peck of corn to the acre. This made a wonderful growth, and I utilized it as late fall and winter pasture, although it was rank and tall enough to be mown for roughage. Other mixtures will suggest themselves to dairymen, the nature of these depending on various soil conditions, climatic influences, location, etc. I also have handled wheat stubble successfully in this manner, re-seeding it as late as mid-August, although there is considerable risk attached to seeding at this late date.—M. Coverdell.

WHAT THE SOW THISTLE IS LIKE

There are still thousands of farmers who cannot identify the perennial sow thistle on sight. Especially is this true in the areas where it is not generally distributed, and, as prevention is better than cure, and recognition of the plant when it first appears on a farm is the secret of easy combat, the Manitoba Department of Agriculture sends out this intimate word description, by which any farmer may identify this exceedingly dangerous weed. There is no other plant growing that will answer this description in all its details, and we suggest that every farmer who does not know the weed should paste this description on his granary door or somewhere else where he can refer to it.

Roots.—This plant produces a system of brown root stocks running horizontally through the soil from two to six inches below the surface. A few fibrous roots grow from these root stocks, but their main function is to act as storehouses of plant food and to aid in propagation. On these root stocks buds are produced, and from these upright shoots of a whiter color are sent to form new plants. From the upright root a great mass of fibrous roots are thrown out, and it is largely through these that the plant feeds. When undisturbed the roots will form a very dense mass and the plants will come up very thickly. The roots and all other parts of the plant are filled with a milky sap.

Leaves.—At its first appearance above ground the plant produces a rosette of leaves quite similar in general appearance to that of the dandelion, the leaves being much the same shape. The leaves are of a light green color, rather soft, have a heavy midrib, and are very distinctly veined. In the rosette stage the greatest width of the leaf is about one-quarter way back from the tip. An unvarying characteristic that helps greatly in identification is that in all stages the leaves have a continuous fringe of spines or "prickles." These spines are about one-sixteenth inch long and are set one-eighth to one-sixteenth inch apart. They are very regular as to size. After two or three weeks in the rosette stage the plant produces an upright stalk, and the leaves borne higher up from its sides are somewhat differently shaped and larger. On a strong plant these stem leaves are from six to twelve inches long close to the ground but quite small toward the top of the plant. Each leaf clasps the stem tightly, having no leaf steam or petiole, as in the case of, say, a popular leaf. These stem leaves lose the regularity of outline and are usually deeply cut with divisions directed backward. They still preserve the fringe of spines.

Stems and Branches.—The stems are of a lighter green than the leaves, usually devoid of noticeable hairs or spines, of rather soft character, and hollow. The plants grow from one to five feet tall. Side branches are shot out from the angles at the base of the leaves, and the plant becomes considerably branched, especially if given plenty of room.

Buds and Flowers.—When about one-third developed the flower bud is much the shape of a binder twine ball. Then it lengthens. The flower is very similar in appearance to the dandelion, but rather larger and a faint shade darker. They are so much alike, however, as to be undistinguishable except to an expert. They open in the morning and close at night. The outside row of petals have very fine serrations at the tip. The bloom first appears about July 4th, and the buds continue to open for several weeks. In most cases after the first flower has bloomed there is a series of flowers produced on surrounding stems, and these latter grow longer than the earliest flower stems.

Seeds.—The seeds are about one-sixteenth inch long, dark reddish brown, oblong and ridged lengthwies. At the top is a tuft of white silky hairs, which spread in drying and cause the seed to float in the air long distances.

SOUND ADVICE

Professor W. R. Reek points out to us that dairying is the great agricultural industry of Prince Edward Island and will always remain so, but one of the drawbacks, according to Mr. Andrew McRae, is the lack of good cows. There are too few that give 6000 lbs. of milk or over, and the great majority give around 3000 lbs. per year, or in many cases less. Good cows are always in demand. The western provinces are gradually adding to their live stock by recruiting among the herds of the eastern provinces; they are willing to pay a long price to get a high-class cow. The transportation charges are no more on a good cow than on a poor one. A word of warning is necessary. If we are to remain a dairy province, and if we are to advance in this work as we should, great care must be exercised in the selling of cows or heifers. Too often large prices induce sales which would never be made if serious consideration were given to the subsequent effect upon the personnel of the herd. Keep the best cows for breeders unless a surplus of high producers is on hand. A foundation herd of cows that have been tried and tested should never be parted with except when an equally good, or better, individual can be put in the place of every one sold.

An export trade in cows is an excellent asset, says Prof. Reek, if we are prepared to meet it properly. To do so we should have a surplus of good cows to offer and reserve foundations which will give good crops of calves next year and the year after. The offering of poor cows and the shipping of such to other parts give the Island no credit, but will ultimately cause her to be a point of supply when cattle in other districts are not available. When the demand is growing is the time to reconstruct our systems of breeding in order that only high-class progeny will be produced. The great secret leading to unusual success in Prince Edward Island at the present time lies in the selection of the sires to be used. Scrub bulls are dear at any price, and the returns from money invested in pure-bred animals will always warrant the expenditure. By careful selection, by careful rearing, by attention to the older stock, and by testing for milking qualities through the use of the scales will the dairy cattle be gradually raised in all parts to a high standard of efficiency.

There is no reason why Prince Edward Island should not become one of the great producers of pure-bred dairy animals in America, attracting buyers from every Province and State where a demand arises. The natural advantages, especially for the combatting of disease, are greater than in many parts. The securing of such a trade lies altogether in the ability to offer well-bred, high-producing cows, heifers, and bulls. Every indication points toward a scarcity of good stock, and now is the time to prepare for the brisk demands of the future. Do not sell the best cows or heifers, but build up the herds by breeding only the best bulls, and in a few years there will be large numbers of stock for sale that wil return very remunerative prices. Build for the future rather than for the present.

However, such cattle should not be raised for export purposes only. Our dairy production is not nearly so large as it might be, and until near the maximum our first aim must be the building up or the transforming of our industry until second to none, either in the production of cattle or the production of butter and cheese.

"Quantity is the measure of power if the quality is good, but in this case quality is the keynote to success," adds Prof. Reek.

"Eastlake" Metallic Shingles

Fire, Lightning, Rain and Storm Proof, Easily Laid and make a good appearing, permanent roof. A post card will bring you particulars.

Metallic Roofing Co., Limited, Manufacturers, Toronto

BUSINESS CONDITIONS FINE

Renfrew Machinery Salesmen Find Business in the Maritime Provinces Better Than Ever

Among recent visitors to Sussex was Mr. F. D. Vickers, general manager of the Refrew Machine Company, makers of the Standard line separators, scales, and engines. Mr. Vickers met the Maritime Province sales staff here and held a conference in regard to the general policy of the company.

Besides Mr. Vickers there were present E. H. Vickers, Sussex; W. A. Jeffries, Sussex; J. A. Beckwith, Nova Scotia; T. McMaster, North Shore; and C. G. Howard, Prince Edward Island.

The reports of the business for 1916 showed that more Standard lines have bee nsold in six months of the present year than during all 1915. The whole selling policy of the company was discussed, and plans were made for the next six months. The stories told by representatives tallied in one regard: sales have never been easier to close among the farmers, and settlements have never been more satisfactory. The company is adding another line to its list—a thirty-pound household scale, and there is already a large demand for it.

Mr. F. D. Vickers was delighted with his visit, and more delighted with the efforts of his eastern staff, who are putting Standard goods on the map.

ACTION OF PLANT FOODS

A subscriber in Pictou County, N. S., wishes to know the part played by the plant foods—nitrogen, phosphoric acid, and potash—in the growth of the plant.

In considering the part played by the plant foods—nitrogen, phosphoric acid, and potash—in the growth of the plant, it must be kept in mind that the effect of any element is largely dependent on the other elements necessary to plant growth being present in normal amounts, that all the elements, working together, are essential to maximum crop production, and thateven when these are present the results obtained by their use are often very materially affected by cultural and climatic conditions.

It is generally conceded that:—

Nitrogen exerts its greatest influence on the amount of foliage, the flowering process, maturing, color, growth, quality, and disease-resisting power of the plant.

If insufficient available nitrogen is present there will be a lack of foliage, stalks or stems will be short, leaves or blades small, color yellowish, weight of foliage, straw, and grain or fruit less than when required amount of nitrogen is available.

If excessive amounts of nitrogen are used the growth of foliage will be out of proportion to the grain or fruit, the growth, development, and maturity of the crop retarded, a tendency to softness of the tissues and apparently less power to resist attacks of fungus diseases.

Potash is apparently essential to the formation and transference of starch and other carbohydrates, has an important part in the development of eaves and woody parts of stems, stiffens the stem, stalk, and straw, assists in the development of the fleshy parts of the fruits, and makes the plants more resistant to the attacks of fungus diseases.

Lack of potash results in weak plants, while excessive amounts delay the maturing of the crop.

Phosphoric acid in available form favors rapid development of the young plant, hastens maturity, increases the proportion of grain to straw, assists in developing the grain, and is necessary to the development of protopeasm, without which there could be no plant growth.

DON'T USE WOODLOT FOR A PASTURE

Stock is usually permitted to graze in woodlots. What is the effect of grazing on the welfare of the woodlot? In open woodlots grazing removes the grass and weeds which otherwise might wither and become inflammable and a fire menace. The sod may be sufficiently broken by the hoofs of animals to permit tree seed to germinate in the mineral soil and thicken the stand of trees. A woodlot, however, should be so dense that little or no forage can grow in its shade.

On the other hand, heavy grazing has a deleterious influence on a woodlot, because stock will trample young seedlings, pack the ground around the trees, adversely influencing the permeability of the soil to water and air, and occasionally certain classes of stock, especially goats, and to a less extent sheep, will bite off seedlings.

Salting stock under trees usually will cause the trees to die, as many cattlemen are aware.

An occasional light grazing of a woodlot may result in but little injury to the woodlot and afford considerable advantage, but heavy grazing is to be condemned.

PREPARING APPLES FOR COLD STORAGE

It will bear reiterating that apples for cold torage should be picked when fully grown, but while still firm and yet well colored. They should be placed in cold storage promptly and all unnecessary delay in grading and packing should be avoided. Storing direct from the orchards without grading, and grading at leisure is good practice. For long period storage only the best fruit should be selected, and it should be free from disease or blemish of any sort. If the fruit is immature or of poor quality it will naturally wilt and decay more readily. If overripe it will dry out and evaporate and become what is known as "mealy." Overgrown fruit is not desirable for storage, as it lacks firmness. Medium-sized, well-colored fruit is the best.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mask

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. When paid in advance 80 cts. Persons taking advantage of the 80 cent rate are only entitled to it by paying in advance each year. When subscription gets in arrears, $1.00 per year will be charged. Subscribers are requested to bear this in mind. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written complaint must be made to the publisher within one week from the date of any unsatisfactory transaction, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said :—"I saw" your adv. in the MARITIME FARMER.

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NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

AUGUST 29, 1916

DATES OF ISSUE

September	12—26
October	10—24
November	7—21
December	5—19

CASH VERSUS CREDIT

That inequality and inefficiency strongly characterize the credit or "tick" system as conducted at present by practically all our country merchants should need no special corroboration in the minds of either the consumer or merchant himself. The facts are it is not real credit at all.

The merchant is not responsible for this, though he could do a great deal to improve it. He does too much to encourage it. Why should a cash purchaser pay for the credit of all debtors who buy on credit? A system which calls for a given price for an article paid for one year after sale and the same price for that article at the time of sale is essentially wrong. The conditions prevailing in one transaction should not govern another under entirely dissimilar circumstances.

There seem to be too many farmers at present to whom credit is an absolute necessity at some time of the year to render possible the total elimination of the present system. A liberal and real discount for cash, however, should be made. Prices might be fixed on 30 or 60 days' credit, with increasing charges thereafter. Some definite settlement plan ought to be adopted—say, 30 days. At that time if the customer does not pay in cash he might make a definite settlement with acceptable notes. Definiteness of policy on the part of the merchant, and backbone to live up to it, are necessary. The concensus of opinion among farmers seems to be against the present system, and though some will always be willing to make unnecessary purchases because credit is available, most farmers are shrewd enough to take advantage of discounts. "In so far as the mail order houses have increased the cash payment habit of mind, they have performed an economic service to both the consumer and the retailer," says a well-informed writer. If the farmer, instead of being a suppliant before the local merchant, could institute credit with his banker and pay cash to the retailer, who would pay cash to the wholesaler or manufacturer, who would manufacture for cash, several exorbitant and duplicate "credit profits" could be eliminated. The objection that credit cannot safely be extended to the farmers is scarcely a tenable one. He gets it now, and pays well for it, too. To stand this giant "system" on its feet instead of its head is not easy, but then we might be able to make it of some real service instead of a burden.

Under such a system many jobbers and wholesalers would have to do something more to justify their existence than they do at present. The army of drummers that marches up and down the country would have its ranks decidedly thinned. The retailer is not altogether responsible for the high prices. Though we are "over-stored" it is doubtful if the elimination of a number would leave more than a good living margin for the remainder. The retailers' recent move for consolidation and direct buying from the manufacturer shows his conclusion in the matter, and is one of the first fruits of mail order competition. The issuing of a special catalog by retail merchants shows they are alive. The present truck system of three "ticks" or credits—manufacturer to consumer—is making too much of a broncho of the farmer and mail order houses are helping lift the burden.—Grain Growers' Guide.

THE BACKBONE OF N. S.

The following editorial appeared in a recent issue of the Morning Chronicle, Halifax, N. S.:

"Agriculture—the backbone of Nova Scotia." How often have we all glibly repeated that statement! And how much have any of us done to justify that statement by our deeds? However, the fact remains: Agriculture is the backbone of our industrial life in this Province. It is the sure foundation upon which our Provincial prosperity is based—and it is progressing.

Progress along any line of human endeavor is led by the enthusiast. Always the enthusiast must be in advance of the needs of the occasion. Just so far will people be prodded along by the enthusiast and always a little short of the ideals he sets will they fall. The enthusiast is a very necessary and vital factor in the upbuilding of our national life just as he is in our business or home life.

Nova Scotia is fortunate in having many enthusiasts pointing the way to progress along the various pathways of endeavor open to our people. Agriculture, the noble vocation, has its enthusiast in Melville Cumming, and a worthy son of Nova Scotia he is. The Morning Chronicle has been indebted to Principal Cumming on each recurring New Year's Day for illuminating articles on our basic industry. We esteem his pleasant prods to greater effort and wish him well in his worthy endeavor to increase the output and value of our agricultural products.

We are exceedingly pleased to congratulate Principal Cumming upon the splendid showing he has been able to make for the creamery industry of this Province. A thirty-four per cent increase in the value of this industry following a three hundred and sixty per cent increase in the preceling year period is indeed a magnificent showing. From ten to fifty per cent more profit for the farmer on his dairy produce as a result of the general improvement in dairying is well worth while. Sixteen million dollars worth of dairy and animal products raised in Nova Scotia in 1915 constitutes a gratifying record. These facts stand out in Principal Cumming's report and fully justify the government's policy in respect to agriculture.

"Nova Scotia another Denmark," has been the guiding light of the government's agricultural policy. It is a sound policy and we are entering upon its full realization. The farm—a factory from which nothing is taken but the finished product—is a sound and sane ideal to set. The finished product is dairy produce and animal products. Let the enthusiast lead the way; the farmer of Nova Scotia has struck his gait and it content to follow. He will make it twenty-five million dollars worth of dairy produce and animal products within the next few years.

COMING EAST

A rancher living on the line of the Pacific Great Eastern in British Columbia has written to the St. John Board of Trade for information respecting farms on the St. John River and the cost of railway carriage for his family and stock. He says he is coming East in the spring to take up a farm here. It is such instances as these that indicate the growing interest that is being awakened in New Brunswick farm lands, and the growing appreciation of the farming opportunities which this Province contains. For mixed farming, dairying, and stock raising New Brunswick is not excelled by any other Province in the Dominion, while rural life here has little of the dreary monotony which affects so many of the newer localities in the west.

UPWARD TREND OF MACHINERY PRICES

Farmers who intend purchasing machinery this season are well advised to buy or arrange for its purchase as early as possible. The probabilities are that manufacturers will be obliged to increase their selling price before the season is far advanced. The price of iron and steel are now at a high mark, and, in fact, everything that goes into the making of machinery is high in price, with no prospect of being reduced in the immediate future. It is not necessary to discuss at length the reasons or causes for this condition. It is simply one of the many reactions of the war.

* * *

Make a study of feeding and caring for the animals. A herd will not develop itself. It takes study, persistence, brains, and ingenuity—and not a little experimenting. And the dairyman must choose carefully the sire for his herd and the cows he keeps for milkers. The records and pedigrees must, of course, be given the proper attention.

* * *

It's the indivilual that counts, not the breed as a whole. Make every individual measure up to the scales and the Babcock test, and you may develop the proper individual from any one of a number of breeds.

* * *

One man can, and does, make more profit from a forty-acre farm than another man can from an eighty. A difference in the farms, you say? Yes, and usually a decided difference in the owners.

* * *

The best way to get a profit-producing dairy herd is to use only good, pure-bred sires, take good care of the cows, and keep the calves "coming" right from birth.

* * *

If you have live stock- seed grain, or other farm produce for sale, advertise in The Maritime Farmer.

HORTICULTURE.

MAKING OLD TREES BEAR

A tree is simply a big plant. It is fed through its roots and leaves the same as the tiniest clover plant. The fact that it is large and sturdy looking leads many to believe a tree can be neglected, that it doesn't need the cultivation, fertilization, and general care that must be bestowed on smaller species of plants to make it thrive.

However, this belief is fallacious. To be sure, many trees will do fairly well even if neglected. But the same is true of more fragile forms of vegetation. Some will die, others will continue to live but will not show healthy growth, nor will they bear well if they are fruit trees, unless they happen to be favored by especially favorable natural soil conditions.

Hard, impervious soil is the tree's greatest obstacle to maximum thriftiness.

Plowing the surface between and around trees helps some, but when a tree is eight or ten years of age, or older, its roots go down several feet. The plow cannot break up the hard subsoil, and thus little or no relief is afforded the feeding roots by plowing. In fact, surface plowing encourages shallow rooting, which every horticulturist knows is bad for a tree.

To date the only practical remedy that has been found for hard soil is blasting with dynamite. Its use enables the orchardist to deeply stir and break the subsoil.

The blasting is quickly and easily done, usually an inch and a half soil auger being employed to put down holes to a depth of about three to four feet. One quarter-pound charge of a slow dynamite, five or six feet out from the trunk, is generally sufficient for a tree under five years old. For larger trees from two to six charges, planted at different points around the trunk, will be required. The proper point to place the holes for the older trees is out at about the edge of the foliage line.

The effect of the blasting is to break up the hard soil, enabling the roots to advance easily into new feeding beds; also to increase the water-storage capacity of the subsoil so that the tree may not suffer from lack of moisture during periods of drought.

POISONING THE POTATO BEETLE

In any community where the Colorado potato beetles are present all possible measures should be taken to exterminate them, or at least to keep them under reasonable control. The following treatment of this pest is recommended:

The way to fight potato bugs is by poison, and the secret of greatest success is promptness. When first the tiny baby bug, newly hatched, begins to feed he may be killed by a poison solution one-third or one-half the strength needed to exterminate his brothers only four or five days older. The standard solution is paris green and water, from three-quarters to one pound of paris green in a 40-gallon barrel of water. When used in this strength the paris green, especially is of an unreliable brand, may burn the potato foliage somewhat, but this can be prevented by adding unslaked lime at the rate of two pounds to every pound of paris green. The lime has nothing whatever to do with killing the bugs; it simply prevents the poison from doing what one is trying to prevent the bugs from accomplishing—that is, destroying the foliage. If lime is used it should be dissolved and strained before adding to the bulk of water, otherwise it may clog the nozzle of the sprayer.

Here are a few pointers as to the use of the paris green:

1. Don't throw it on top of a large amount of water and attempt to stir it in; much of it will attach to the sides of the barrel. Rather take a little water and with this make a paste of the paris green. Then by gradually adding more water the whole amount of poison can be brought into solution.

2. Keep the solution well stirred as it is used. Paris green does not dissolve in water; it is simply held in suspension. Don't let it settle to the bottom of the barrel.

3. Use as fine a spray as possible and don't flood the leaves. When the water runs off the poison is running away with it. If sprayed on finely without dripping more solution actually remains on the leaf than if it is flooded.

4. Try to avoid spraying before a rainfall. The poison will wash off.

5. Respray as often as necessary throughout the season. If well done, two or three treatments should suffice. Paris green sells this year in country stores at from 60 to 75 cents per pound, and from one to one and a half pounds per acre is enough, if well put on, to do the entire season.

PRUNING THE TREES

Always use a pole saw and pole shears on the tips of long branches, and use the pole hook in removing dead branches of the ailanthus and other brittle trees where it would be too dangerous to reach them otherwise.

Do not "head back" or cut off the top of a tree except where the tree is old and failing, and then under special instructions.

Be as sparing and as judicious in pruning as possible, and do not raise the branches so high as to make the tree look like a telegraph pole.

Commence pruning the tree from the top and finish at the bottom.

Make every cut as close and parallel to the trunk as possible.

To make the cut perfectly smooth the saw must be well set and sharp.

Leave no stubs, dead and dying wood, or fungus-covered branches behind you.

Do not fail to cover every wound with coal tar, not allowing it needlessly to run down the trunk.

Do not remove several large branches on one tree at a time. They must be removed gradually, the work extending over several seasons.

Prevent tearing the bark off the trunk in removing large limbs by first making an "undercut."

Make the cuts on a slant. Some trees, like the elms, sycamore, linden, and willow will stand the process of heading back more than others, and the poplar is a tree that must be cut back every few years to keep its crown from becoming too tall and unsafe.

When shortening a branch, leave a few twigs at the end to draw the sap to the freshly cut wound and thus enable the growing layer under the bark to heal it over.

In trimming small branches or shoots the cut must be made just above a bud.

When several branches come out from the trunk in a whorl they should not all be cut away at the same time lest the tree be girdled. This arrangement of branches occurs most frequently in the coniferous trees.—American Forestry.

TIE CAULIFLOWER HEADS EARLY

As soon as the heads begin to form great care is required in trying up to protect them from the sun, wind, and dust. Perfect heads are what we should aim to get. From them we derive the profit. The tying should be so done that it will be easy to see when the head is ready to cut. Good judgment is required.

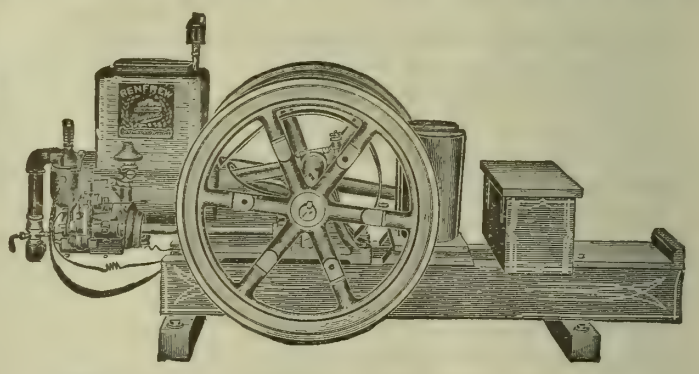
It is better to cut a little early than too late. Young, tender heads are more salable. More are consumed if taken to market young than later. If danger from frost threatens, the leaves should be tied more closely. This will protect heads from a certain amount of frost—say, seven degrees.

ARTISTIC MARKINGS

The tendency of many fruit growers is to not pay enough attention to the proper marking of their boxes and barrels. For this reason they do not obtain the high market price.

Some growers are using stencils of special design to much advantage and thereby greatly increasing their output.

The War Brings New Farm Labor Problems



FOR years there has been a shortage of farm labor in Canada. Recruiting has intensified this shortage, for thousands of farmers' sons and able-bodied hired men are now in khaki. Many farmers are at their wits' end to know how to carry on their work under today's conditions.

While the

Renfrew Standard
It starts without cranking

gasoline engine cannot altogether take the place of the absent workers, it can lift a great burden of work off the farmer's shoulders.

It can furnish power for cutting wood, fence posts, turning handles, running the grindstone.

It can drive the thresher, grain elevator, straw cutter, fanning mill and hay press. It can run the sausage grinder, green bone cutter, separator, churn and washing machine. It can pump water for the cattle.

THE Renfrew Standard gasoline engine can do the work faster and at a great deal less cost than man-power. It enables the farmer to do a great deal more work, saves him a lot of hard labor. It's a war time necessity.

Any young boy or girl of average intelligence can run a Renfrew Standard gasoline engine. No trouble to start it—it starts without cranking. It has two complete ignition systems—high tension magneto and batteries. It has a carburetor that saves gasoline—and a fly ball governor that enables it to be regulated as closely as a steam engine. It is a big, strong engine—for example, the 6 h.p. Renfrew Standard is almost as large as the average 8 h.p. gasoline engine.

All sizes from 1½ h.p. to 60 h.p.—stationary, portable and semi-portable. Write for engine catalog and prices.

We also have a full line of ensilage cutters, grain grinders, saw frames, etc.

THE RENFREW MACHINERY CO., Limited, - Renfrew, Ont.

Agencies almost everywhere in Canada

See our exhibits of engines, separators and truck scales at all leading Fall Fairs and most of the smaller ones.

Unable To Sleep Or Do Any Work.

SUFFERED FROM HER NERVES.

Mrs. Thomas Harris, 8 Corrigan St., Kingston, Ont., writes: "I had been a constant sufferer, for many years, with my nerves, and was unable to sleep at night, or do any work through the day. I at last decided to consult a doctor and find out what was really the trouble. The first one told me I would have to go under an operation before I would be well, but I would not consent to this. One day I took a fit of crying, and it seemed that if anyone spoke to me I would have to order them out of the house. I must have been crying two hours when my insurance agent came in. He advised me to try a box of Milburn's Heart and Nerve Pills, and I at once sent to the drug store and got two boxes, and before I had them taken I felt like a different person. I have told others about them, and they have told me they would not be without them. I am very thankful I started to take Milburn's Heart and Nerve Pills."

Milburn's Heart and Nerve Pills are 50 cents per box, or 3 boxes for $1.25, at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Famous Little No. O Power Mixer

Turns out a batch of thoroughly mixed concrete in less than one minute. Discharges from either side, which other mixers do not do. Also mixes your lime and cement mortar to perfection. Light, durable, highly guaranteed, and has a big reputation. Adapted for a hundred different kinds of jobs. A great money saver. Write for our special offer.

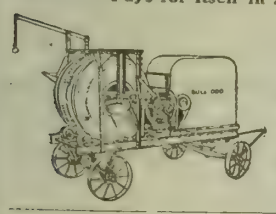
WETTLAUFER BROS., Limited
178 E. Spadina Ave., Toronto, Ont.
188 Barrington Street, Halifax, N. S.

Fruit Packages

As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,
HANTSPORT, N S.

LONDON "BULL DOG" BATCH MIXER
Pays for Itself in 20 Days



Built to last a lifetime. Send for catalogue No. 1 B.

LondonConcrete Machinery Co.
Dept. E London, Ont

World's largest mauufacturers of Concrete Machinrey.

Montreal, May 29th, '09.
Minard's Liniment Co., Limited.
Yarmouth, N. S.

Gentlemen—I beg to let you know that I have used MINARD'S LINIMENT for some time, and I find it the best I have ever used for the joints and muscles.

Yours very truly,
THOMAS J. HOGAN,
The Champion Clog and Pedestal Dancer of Canada.

Advertise in The Maritime Farmer.

APPLE SHIPPERS COMBINE

On August 2d and 3d the first annual convention of the newly organized National Commercial Apple Growers' Association was held in St. Louis, Mo. This marked the permanent organization of the society which was launched in St. Louis in une, when Senator Dunlap, the well-known Illinois orchardist, acted as temporary chairman and H. C. Irish, of St. Louis, as secretary.

The foremost apple growers of the country are lined up with this new organization. Generally the past season was unsatisfactory to a majority of commercial growers. The lack of unity, poor quality apples, and attendant low prices broke the market early, and it is to avoid a repetition of these conditions that the association was formed.

This association is not intended as a horticultural society, for the business or theoretical or cultural subjects—but has for its aim efficient co-operation among the members to eliminate waste and insure a more uniform market distribution than has prevailed in the past. It is not a trust. No individual or concern who reaps a legitimate profit from the apple business will suffer, but with the information this association will be able to gather and disseminate among its members each member can the more intelligently make his price and terms, since he will be informed upon market conditions as well as the buyer.

It is its purpose to maintain an office in charge of an experienced man, who will act as secretary-statistician in the pay of the association. He in turn will disseminate daily market and crop information, both by bulletin and in response to direct inquiry. Laws, market regulations, and other subjects of vital interest, present and future, will be analyzed and present 1 for the benefit of the members. Such information will first be given in confidence to members only.

THINNING FRUIT PAYS

The man who puts on the market inferior fruit does an injury to both himself and the fruit business.

Fruit can be too large for the market, but it seldom is.

Thinning is the only recipe for large, plump, high-colored, juicy fruit. It pays.

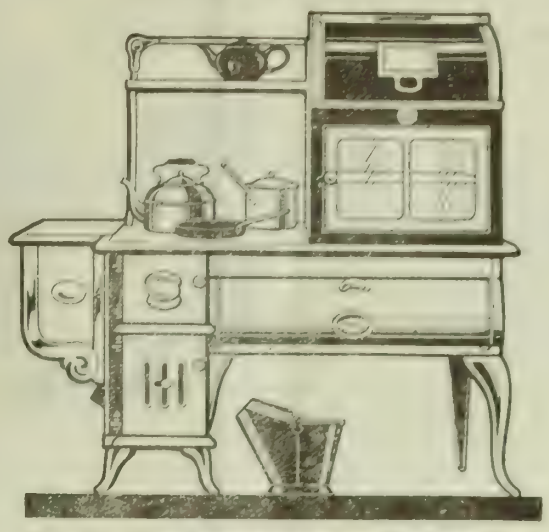
Nobody wants undersized or misshapen fruit. A crate of little peaches never brings as much as a crate of big ones. So it pays to reduce the number of crates by thinning if the quality is thereby much improved. Often, however, there will be just as many crates as there would have been if no thinning had been done. Sometimes there will actually be more. The large fruits are more cheaply picked, packed, and handled.

Thinning saves the fertility of the orchard. Not very much fertility is taken away in the pulp, but the seeds draw heavily on it. In other words, the man who thins takes off more good fruit, gets more money, and removes less fertility from the orchard. He also saves his trees from exhaustion. It pays.

CLIPPINGS AID LAWN IF PROPERLY USED

The question often arises whether the cut grass should be left on the lawn or removed. The following may solve the problem:

A lawn will always do better when some form of top dressing is applied each year. Well decomposed sheep manure is best. When no manure is used grass clippings will take its place to a certain extent. In such case it serves a double purpose—as a mulch and as humus. The mulch protects the plans from drying out, and the humus aids in the formation of plant food. There is danger of overdoing the above, for if the layer of clippings becomes too deep they will heat when this overheating. water is applied. As a result, the So, to be on the safe side, remove grass roots become injured through all but every third or fourth cutting.



LIGHTER DAY HIGH OVEN COAL RANGE

STOOPING—bending over to an oven makes baking day so wearisome. Now, it is needless exertion. The Lighter Day Coal Range has a Handy-height Oven. The Handy-height Oven has a Clearview Door. There is no bending over—none. Dishes can be watched as they bake. This saves many weary trips to the oven.

New-style finish in white porcelain enamel and bright nickel. 700 stores have it. Book of photos on request.

CLARE BROS. & CO. Limited, PRESTON

8

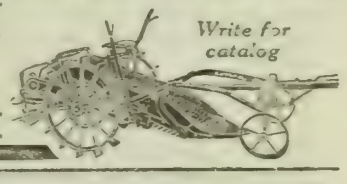
Eureka Potato Digger

Gets the Potatoes and separates where no other digger can

A strong statement, but an actual experience many times, saving growers more than the cost of the Digger. Ask us for the proof.

The Eureka elevator and duplex shaker provide more separation than other diggers. Large wheels and main gears supply ample power. Mostly malleable and steel, avoiding frequent breakage and lost time. Growers report digging 80 or more acres without repairs. High clearance over shovel prevents weeds and vines bunching. Has vine-turner attachment.

6-ft. and 7-ft. sizes; several styles.
Prompt shipments from distributing points.
EUREKA MOWER CO., Box 1018, Utica, N.Y.
Sold by FROST & WOOD CO., Ltd., St. John, N. B.



Wilkinson Plows

THE oldest line of steel beam plows in the Dominion, made in the old Wilkinson Plow Co's factory, by old Wilkinson Plow Co. experts—every one of them men who know their business. It is **the standard line of plows** and includes 25 or more styles to choose from. U. S. S. Soft Center Steel Moldboards, highly tempered and **guaranteed** to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plow is fitted especially with its own pair of handles—rock elm, long and heavy and the right bend. The long body makes it a very steady running plow. Shares of all widths — specials for stony or clay land.

General purpose, light, medium, and heavy, side hill, sod, drill or one horse plows

The plow shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. *Ask for new booklet.*

The Bateman-Wilkinson Co., Limited
431 Symington Avenue, Toronto Canada

Repairs for all Wilkinson Plows

LIVE STOCK.

TAKE THE HORNS OFF

It is quite generally the practice at the present time to remove the horns from cattle. To be sure. Jersey and Ayrshire fanciers do not remove these appendages from their favorites without many a pang, as neither of these breeds seems to fill so perfectly the eye of such persons when without horns. Hence it is that breeders of fancy stock do not usually remove the horns from those animals that are to be offered for sale.

It is safe to conclude, in the light of our present knowledge, gained through experience, that dehorning as generally practiced is decidedly a humane operation, and should be more generally practiced than it is. Numerous injuries are thus entirely avoided, not to mention the much greater ease and safety in handling cattle after removal of horns.

There are two periods in the life of a bovine when the horns may be removed—when very young, and after reaching maturity. The method of procedure will vary greatly with the age of the animal. After a careful study of methods, results, etc., I think all will agree that, everything considered, the best time to operate is when the animal is young. At this time very little skill is necessary; there is little constitutional disturbance and consequent loss in products and flesh; and, to me more important still, seems to be the fact that animals thus operated upon in the large majority of cases come out with no serious scar or deformity, and have a perfectly smooth poll closely resembling those animals born hornless.

When mature animals are dehorned it is very common to see stumps left varying in length from one-half to two inches, which are weapons almost as savage as the entire horn. In this operation considerable skill and experience are required to give uniformly good results. When performed by the inexperienced, great difficulty is encountered in properly restraining the animal, this often resulting in a hurried and incomplete operation.

This operation should be performed either in the fall after the flies have disappeared or in the early spring before flies have arrived. It is more or less cruel to operate during the heat of the summer when flies are numerous.

The important thing in this operation is to have the animal securely held in some way. Where much of this work is done an especially strong stanchion is desirable. For ordinary purposes a ring in or near the floor through which a rope can be drawn will answer, so that the head may be pulled down with the aid of nose tweezers and securely held. The horns are best removed with one of the patent dehorning shears so constructed as to give great leverage.

In removing the horns it should be cut down close to the hair. Some say that to insure good results a ring of the skin should be taken. Care should be used not to cut too deeply, however. as serious bleeding sometimes follows. For a dressing all that is used is a little pine tar and a pad of absorbent cotton or oakum to check the bleeding and keep out the dirt.

Newly dehorned animals should not be allowed to feed from hay or straw stacks, where the wounds would become filled with chaff and dirt and possibly give rise to serious complications. When serious bleeding follows the operation, use either tincture chloride of iron and a pad of cotton or touch the small arteries with a white hot iron, searing them over. When a case gives considerable trouble I would by all means advise the latter.

As a result of many experiments covering a wide range in time and country, it has been decided that the best dehorning agent is caustic potash fused in the pencil or stick form. Directions for dehorning calves usually state that the caustic should be applied as soon as the budding horn or button can be felt under the skin. As a rule, this can be done when the calf is but a few weeks old, and although it is claimed by some that horns may be removed from animals six months old it is undoubtedly best to operate early.

When the proper time arrives, clip the hair over the horn from an area the size of a half dollar, wash with soap suds, and rub on the moistened caustic. To prevent the caustic from running, moisten it only slightly, and apply lard or vaselin all about the spot treated. When the scabs fall off a careful examination should be made, and if the horn is still prominent make another application of the caustic. To protect the fingers, wrap the caustic well with paper. If active caustic is thoroughly applied over a sufficiently large area the horn will unfailingly be killed by one application.

By all means, dehorn your calves, thus saving time and perhaps avoiding serious personal injury.

SCOURS IN YOUNG PIGS

Cure scours by finding and removing the cause of the trouble. If the pigs are kept free from scours and thumps they have escaped the most common trouble of the pig pen. The ailment is really a symptom of indigestion caused by changing the feed of sow, too much feed, dirty pens and troughs, or chilling the sow or pigs in cold rain or winds.

Changing the feed of either sow or pigs from sweet to sour milk will often cause scours, and so will the improper use of feeds like blood meal, tankage,

Ford
THE UNIVERSAL CAR

New Prices August 1, 1916

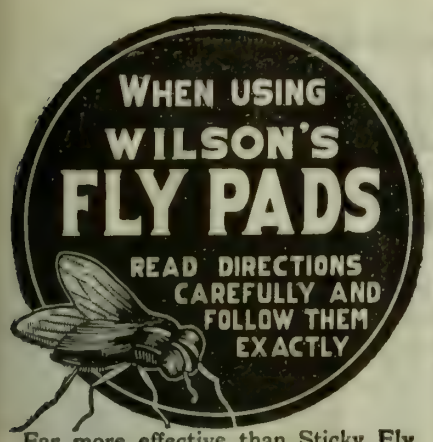
The following prices for Ford cars will be effective on and after August 1st, 1916

Chassis . . .	$450.00
Runabout . . .	475.00
Touring Car . .	495.00
Coupelet . . .	695.00
Town Car . .	780.00
Sedan . . .	890.00

f. o. b. Ford, Ontario

These prices are positively guaranteed against any reduction before August 1st, 1917, but there is no guarantee against an advance in price at any time.

Ford Motor Company of Canada
Limited
FORD, ONTARIO



Far more effective than Sticky Fly Catchers. Clean to handle. Sold by Druggists and Grocers everywhere.

THE ORIGINAL AND ONLY GENUINE

BEWARE OF IMITATIONS SOLD ON THE MERITS OF MINARD'S LINIMENT

Minard's Liniment Co., Limited.

O. K.'D BY BUSINESS MEN

The stamp of approval has been placed on our School by Successful Business Men, our Successful Graduates, the Community in General, represented by the prominent men, throughout the country who know of the high-grade work we are doing.

This stamp of efficiency simplifies your problem of selecting the school which will best serve you. Write for information now.

Moncton Business College
Moncton, N. B.
G. J. Schmidt, Principal

THE FALL TERM
of the
Fredericton Business College
will open on
Monday, Aug. 28, 1916

Booklet descriptive of our courses of study and rates of tuition will be sent on application. Address

W. J. OSBORNE, Principal,
Fredericton, N. B.

Advertise in The Maritime Farmer.

and oil meal, which contain more protein than the other feeds which the animal has been eating. It is usually well to feed both sow and pigs all they will eat, but if this should result in stimulating the milk flow so that the youngsters get more than they can digest, scours will result, and the sow's feed must be cut down.

Clean dry quarters and clean troughs will do much to prevent scours by preventing the pigs from swallowing filth which contains germs which multiply in the stomach and intestines and cause digestive trouble. If the sows have been wading through mud and filth before being suckled by the pigs the same results are likely to follow. So they should all be kept in clean dry lots where the sun has a chance to get in and kill the germs, and good ventilation makes the air pure and helps to keep the floors and lots so dry that any germs that are present are less likely to be taken by the young pig when it sucks or eats. This can be arranged by opening up trap doors in the roofs of these sheds during warm, sunny days and closing them when the cool nights make protection necessary, or rains threaten to come in through the open doors and chill the sows and pigs or soak their beds.

If scours appear in spite of all precautions, the following treatment has proved valuable to the Missouri Station: Reduce the sow's feed, clean up more thoroughly than before, and give the sow a tablespoonful of sulphur in each feed for several days. It is also well to give the sow a good dose of epsom salts. If practicable, each pig may be given a teaspoonful of castor oil, or epsom salts, and charcoal should be provided in any convenient way. If no cheaper charcoal can be secured, it can be supplied by starting fires of cobs and then putting the fires out before they burn out.

Thumps in young pigs result from too much feed or too little sunshine or exercise, or both. The remedy is to reduce the sow's feed and compel the pigs to take plenty of exercise in the open air and sunshine. This treatment is only effective for pigs that have not been weaned, since thumps in older pigs is usually caused by trouble in the lungs or bronchial tubes. —L. A. Weaver.

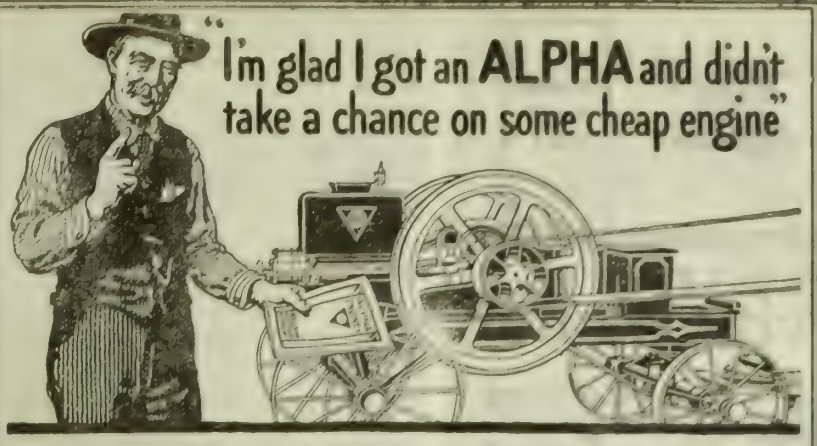
CALVES IN HOT WEATHER

A little extra care during the warm weather period will place calves on a footing that will carry them a long way toward being the best possible cows, while if they are neglected at that time it is almost impossible ever to get them started right again.

We may well place shelter and other protection from flies first in the list of things to do. If free from flies the calves will grow much faster than if they are compelled to fight these pests all the time. A shelter of some kind is therefore a fine thing. We took an old hen house and turned it into a calf house. At the door we hung a strip of burlap large enough to cover the opening. The calves soon learned that they could push this aside and go in when they wanted to, and as they entered the cloth brushed the flies off their backs. A little spray of fly killer will help, too, very much and should be applied every morning.

Shelter of this kind is also a good thing in stormy weather. We lost a fine pure-bred calf one year simply because it was permitted to run out in all kinds of weather and lie on the ground. We thought the earth was warm enough, but the calf took cold and died of bowel trouble. Since then we have taken pains to get the little chaps in when it is raw and stormy.

The food given is very important at this season. No doubt many a good calf has been spoiled by being fed today sour milk and tomorrow sweet. When we get our calves on one kind of feed it is well to keep them there. Again, some hay every day is the best thing possible. If a calf has plenty of nice bright hay regularly, even if out on grass, it will not be very apt to have any trouble of the bowels. The juice of the hay has a curative value. Plenty of water should be given in connction with th milk. These are all surely worth while things in bringing up a calf.—E. L. Vincent.



SOMETIMES a man is tempted to buy a cheaper engine than the Alpha, hoping to save a little money. If you are tempted to take such a chance, it will pay you to first study engine construction carefully. It is only reasonable to assume that if other engines were as good as the Alpha they would cost just as much. Why shouldn't they?

In considering the purchase of an engine, do not let the first cost blind you to the vitally important things you wish to buy in an engine. You want an engine that has plenty of power; that is simple and easy to operate, that is free from weak, complicated, troublesome parts; that is strong and durable enough to give you years of good service. With these things in mind, compare the Alpha, part for part, with any other engine. You will then see that for the slightly higher cost of the Alpha you get by far the most for your money.

Then talk to any of the thousands of Canadian farmers who are using Alpha Engines and they will tell you they are glad they did not take a chance on some "cheap" engine. It does not pay to take chances. Be on the safe side and buy an engine that sells on its merits; that has something more than its price to recommend it.

There is nothing mysterious about the superiority of the Alpha. The better design of this engine, the quality of material and workmanship that go into it, are easily seen. Ask for a copy of our catalogue. It illustrates and describes every feature of the Alpha and every feature of this engine has in it some sound reason why the Alpha will give better service and last longer. Read the catalogue carefully and you will see where the extra value comes in.

Alpha Engines are made in eleven sizes—2 to 28 H. P.—each furnished in stationary, semi-portable, or portable style, with hopper or tank cooled cylinder.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors of the famous De Laval Cream Separators. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

TOO MUCH SALT MAY KILL ANIMALS

Samples of salt are occasionally sent to the Agricultural College for analysis with the statement that animals, usually cattle or sheep, were poisoned after eating it in considerable quantities. In no case has any foreign substance that would account for the poisoning been found.

Since salt is necessary to life and is in universal use, it is difficult to realize that in large amounts it is poisonous. Many cases of poisoning in chickens have been reported and occasionally in larger animals. In one instance salt was by mistake used instead of sugar in making a cake. The cake was given to the chickens and killed all of them. Chickens are very susceptible to salt poisoning, and while the amount that it takes to kill a horse or cow is considerable, this sometimes occurs when these animals are especially salt hungry.

When animals have not had access to salt for a long time it is safer to give it to them sparingly at first.—I. E. Newsom, Coloroda Agricultural College, Fort Collins, Colo.

AUTOMATIC DIPPING TANKS

A wallow is as necessary for a hog as a bath tub is for a human being. A clean bath benefits the health of a hog, especially if the wallow is filled with a dipping solution. This combination not only saves the lives of fat hogs on hot days, but also aids greatly in preventing cholera.

Locate the wallow in a convenient place near the water supply. A level, well-drained spot, where the mud will not wash into it, is best. Make the wallow 8 by 12 feet. Dig out the hole with straight sides to the depth of 2 feet 2 inches. Lay a drainage foundation 10 inches thick. Set a 10-inch board around the outside of the hole to keep the dirt from crumbling in on the concrete.

Mix the concrete 1:2:4 and place a 6-inch floor in the hole. As the concrete is laid, embed woven wire in it 1 inch from the bottom. Have the concrete for the side walls fairly dry and tamp it to the shape and dimensions —4 inches thick at the top and 10 inches at the floor line. The sloping sides make cleaning easy. Keep all animals away from the wallow for two weeks. Three men built this wallow easily in one day.

The milch cows are not benefited by a walk of a mile or two to pasture each morning and evening. Occasionsionally arrangements can be made so as to have the young stock in the furthermost pasture and the milk cows in pasture nearer home.

A Sure Prize Winner

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 178

DAIRYING.

THINGS TO AVOID IN BUYING A COW

If I were going to buy a dairy cow, here is the kind I would not want. I would pass her by every time and go on looking for my ideal of a cow.

I don't want a cow with two or even one horn. She might horn me or my dog, or some valuable farm animal.

I don't want the old cow. She cannot chew her food, she is apt to be unhealthy, and I might have to haul her to the bone yard.

I don't want the cow that has been sick or is sick. Her constitution is out of fix and if I drink her milk or eat her butter my constitution might soon be out of repair.

I don't want the cow with knots on her jaw or any other part of her body; makes no difference how long they have been there or how little harm they may have done. She might wake up some morning with the lamp jaw in good shape.

I don't want the cow that has short teats. My hand is very good size, and I never could milk a cow well with two fingers. I let her pass.

I don't want the cow that gives a stream of milk about the size of a horse hair when you are pressing with all your might on her teat. Takes too long to milk her and waste a man's strength. She can go to the butcher as far as I am concerned.

I don't want the cow that gives a gallon of milk in the summer and goes dry in the winter. Feed is too high for me to board such a cow. She may raise a good calf, look fine, and all that, but I will not put my money in her.

I don't want the cow that will kick the bucket of milk over my head and jump over the moon besides. Never did like a kicker of any kind, especially one in the bovine family. Clothes are too high priced and doctor bills are out of sight these days.

I don't want the cow that gives you a friendly butt when you are not looking. I have no eyes in the back of my head, and just when I did not want to be butted would be the time she practiced her butting stunt. Then she might get after the wife or the children, and they don't want to be butted any more than I do.

I don't want the cow that knows how to go through hedge and barbed wire fences and to unlock the gate or the stable door. No, she is a little too smart a cow for me. I don't like to keep a cow tied up, and I am not an expert at making cow yokes.

I don't want the cow that is wild as a deer. I am not a cowboy and I do not wish to spend an hour each evening on a pony rounding the sister up so that I can get a quart of milk from her unfriendly hide. No, she doesn't suit me. I want the gentle cow.

I don't want a cow that is always flopping her tail in my face even when there are no flies in the country. I never did like to be compelled to tie a cow's tail to my boot strap or the rafters of the barn while I robbed her of the lacteal fluid.—W. D. Neale.

DOES IT PAY TO RAISE PURE BREDS?

When you begin to talk dairying to a man, the first thing he asks is: Shall I put in pure breds or grades? There is a great demand for both pure bred and high grade dairy cows, and any farmer that is a good feeder and caretaker can make money by raising either or both to sell; but a man must first succeed with grades before he can expect to succeed with registered stock. The safest plan is to buy a good registered bull and grade up a good herd and see how much better they are than ordinary common cows. And then add two or three pure-bred heifers and give them good care, and you will see them beat the grades so much that you will get that pure-bred enthusiasm that is necessary for success in any line.

In our own herd we used a registered Guernsey bull on grade cows until his daughters began to come in; then we were so well pleased that I borrowed $300 and bought three registered Guernsey heifers.

From this start start, five years ago, we have sold two cows for $560, five bulls at an average of $45 each, and I recently sold a heifer calf ten months and eight days old for $225 spot cash, and our herd now numbers thirteen head—ten cows and three calves—for which we were recently offered $275 per head for the cows and $325 for the three heifer calves.

After receiving $225 for the heifer calf and getting the good offer for the others, it has enabled me to store up enough pure-bred enthusiasm to last a lifetime, because I believe there is a great future for the young man that is breeding good dairy stock.

I recently filled an order for some South Carolina farmers for twenty-nine head of high-grade and registered Guernseys, for which they paid the Virginia farmers nearly $4,200. In January I shipped these same South Carolina farmers $3,000 worth of grade Guernseys. I could not find them in Virginia, and was compelled to leave that money with Maryland farmers. When more farmers in this state have learned the value of good pure-bred bulls we can fill orders for dairy stock without going out of the state. In the past seven years I have purchased $97,000 worth of dairy cows for southern farmers, and nearly all of this money has gone north and west. Dairying is yet in its infancy, so let's start now to raise nothing but good dairy stock. A two-and-a-half-year-old heifer is worth more money than two steers at the same age.—C. T. Rice, Fairfax County, Virginia, in Southern Planter.

MILKING CONDITION

The production of large quantities of milk constitutes a heavy drain upon a dairy cow, and unless compensated for by an adequate supply of food of sufficiently good quality it causes her to lose flesh. It is evident that if cows are fed on a poor diet while they are yielding milk they are bound to be very poor in condition. The milk yield naturally suffers greatly, and the cows do not give as much milk as they are capable of yielding, while they also tend to become dry very quickly. When cows which are unduly thin owing to poor feeding receive a generous and rich diet they do not as a rule straightway respond to the improved diet by giving more milk, because the extra food at first goes toward improving the cow's condition, and not toward an increased secretion of milk. Only when the cows have improved in their bodily condition will they respond to the improvement in their diet by an increased milk yield.

When dairy cows which are in milk get fat as the result of a too plentiful supply of rich and fat-producing food, they fall off in their milk yield. An unduly fat condition causes the cow to dry off sooner than she would do if in proper milking condition. Some dairy cows lay on flesh and fat easily and readily when fed in a liberal manner; it all depends upon the nature of the cow and upon her breed. Dairy Shorthorns and cows with a preponderance of Shorthorn blood in them are generally well-fleshed and readily lay on fat while milking when their diet is of a fattening nature and very generous. The same applies to Red Poll cattle, and in fact to all cows of the dual purpose type in which flesh-making capacity is an inherent quality. Cows of the Channel Islands breeds—Guernseys and Jerseys—being of the purely dairy type, naturally do not tend to become fat when in milk. Ayrshire cows also do not usually get into too fleshy or fat condition during their milking acreer.

Cows which are exceptionally deep milkers and which yield unusually large quantities of milk are very often

Inside Comfort

When the Thermometer outside registers below zero you will find that you can keep your thermometer in the hall up to Summer Heat, 70 degrees above zero, if you have an

Enterprise Blazer Furnace

installed in your cellar. With this furnace you secure an **even** temperature, **perfect** ventilation, **economical** fuel bills, and simplicity of operation.

Made in the country where furnaces are used the most, and by a firm with large experience in Furnace making, an "**ENTERPRISE BLAZER FURNACE**" will give more heat and comfort for every dollar expended than any other on the market.

Fully illustrated booklet telling you all about it, free for the asking. Also testimonials from people using the Enterprise Blazer in every Province in Canada.

The Enterprise Foundry Co.,
Sackville, N. B.

21

How much do You Lose on Each Cow?

Will you admit that there may be a little cream left in your skim milk? Few dairymen realize that this loss on each skimming twice a day would more than pay for a

"SUPERIOR" SEPARATOR

in the course of a year. That's a statement that needs support. The book of Superior facts will support the statement—the machine itself will prove it. Write to-day for the handsome book that reveals new lights on Separator construction, tells in simple language about the self-balancing bowl, the bicycle-clutch crank, and the advanced oiling system.

The prices of the Superior Separator are $52.50 and $65.00, according to capacity. Full details in the book.

THE ONTARIO MACHINE CO., LIMITED
18 BLOOR STREET EAST TORONTO
16

particularly thin in condition and look unduly lean and poor. This is due to the enormous drain they undergo in consequence of yielding so much milk.

A common mistake is to suppose that exceptionally heavy milkers must necessarily become thin when in full milk and that it is not possible to maintain them in satisfactory bodily condition. Cows of this kind naturally require a larger supply of concentrated food in order to keep in good bodily condition than cows that are not such deep milkers, because they use up more food in making milk than the latter, but when their requirements are fully met by an increased or extra allowance of concentrated foods they can well be maintained in satisfactory condition. There are doubtless some deep-milking dairy cows which are by nature bad doers, and which become very lean and lose condition after having been in milk for some time, despite the most liberal ration of rich concentrated food, or despite rich and plentiful grazing; but such cows are the exception and not the rule among heavy milking cattle. However large a quantity of milk a dairy cow may yield, it is generally easy to keep her in proper bodily condition if her requirements in the way of food are fully satisfied. Quantity of food is of no importance here; what is required is sufficient food of a rich quality.—G.

How to Have Dry Buildings

IRON doesn't wear out, it rusts out. Ready Roofings don't wear out, they dry out. Do you know how important this is? It means that there is a tremendous difference between ready roofings, even though all have felt and a waterproofing compound in them. It's the quality of that compound, plus the skill used in saturating the felt, that counts. It is the skill used in the saturation, plus the chemical composition of the saturating compound that makes Panamoid a wonderful roofing.

PANAMOID ROOFING

Panamoid is made of the best felt that can be obtained. It is tough, fibrous, strong. This felt is uniformly saturated with a non-volatile compound that stays there. Being thick, the felt holds this saturation indefinitely. If you want dry roofs at low cost, come in and get some Panamoid Roofing. Very easily laid.

Carritte-Paterson Mfg. Co., Limited
Halifax, N. S. St. John, N. B. Sydney, N. S.

THE ADVANTAGES OF HIGH-TESTING CREAM

The average fat content of cream delivered to many creameries is approximately 25 per cent. This means that in some instances the best is above and in others below this average. It is evident that many creamery managers, as well as many farmers, do not understand the loss involved in handling thin cream.

Cream testing 30 to 35 per cent is the most satisfactory to the farmer and to the creamery man. A comparison of low-testing with high-testing cream reveals for the latter the following advantages:

(a) To the creamery man:

1. Less bulk to handle, hence less labor, fewer churnings, smaller equipment and building.

2. Less buttermilk, hence less loss of fat in buttermilk.

3. Costs less to pasteurize, about one-half as much steam is required per 100 lbs. of fat in 34 per cent cream as in 17 per cent cream; two-thirds as much in 33 per cent as in 22 per cent cream. In cooling the cream less water or brine is required for the handling of the same amount of fat when the cream is rich than when it is thin.

4. In pasteurizing sour cream the formation of large curd particles, with the attendant loss of butter fat, is avoided, to a great extent, if the cream contains more than 30 per cent fat.

(b) To the farmer:

1. Less bulk to handle, hence fewer cans and smaller cooling tank required. Fifty pounds of 34 per cent cream and 100 lbs. of 17 per cent cream both contain the same number of pounds of fat.

2. Less bulk to cool, hence less ice or cold water required; quicker cooling, hence less deterioration. Cream spoils in a short time if not quickly cooled and held at a temperature below 50 degrees Fahrenheit.

3. Less bulk to haul to creamery.

4. Better keeping qualities of the cream. Bear in mind that it is not the fat but the other solids in the cream which become sour and spoil. As thin cream contains more of those solids it sours sooner than thick cream.

5. More skim milk kept on the farm. The farmer who delivers 100 pounds of fat in 17 per cent cream delivers 294 pounds of skim milk more than he would if he delivered 34 per cent cream. Unless the buttermilk is returned free this is a dead loss to him. At 25 cents a hundred pounds it amounts to nearly 75 cents, or three-fourths of a cent on each pound of butter fat delivered.

Farmers sometimes offer the following objections to high-testing cream: Thick cream may stick to the can and be a loss to the farmer; improper samples may be taken because of insufficient mixing; a high test is more likely to be cut than a low one.

In a properly operated factory, however, these objections do not hold, and the creamery man who would have his patrons deliver rich cream will manage the plant so efficiently that there will be no grounds upon which to base such objections.

Don't shut the bull up in a dark, lonesome place.

Every pig raiser should have a patch of rape. When it is eaten down the pigs should be taken off until the new growth starts up sufficiently.

Don't Delay buying a

DE LAVAL SEPARATOR

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IF YOU ARE SELLING CREAM or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

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THE HORSE

FEET OF HORSES—THEIR STRUCTURE AND CONDITION

The principal points to be observed in the care of colts' or horses' feet are to keep the feet in as near a natural shape as possible, and in hot, dry weather to supply moisture, says a writer in the Breeders' Advocate. So long as a colt is running with its dam on pasture the wear of the wall at the bottom about equals the growth from the top, hence the feet remain normal in size and shape. The same may be said of the unshod horse.

As soon as the colt is brought into the stable for the winter, and the outdoor exercise it gets is mainly upon straw in the yard, or upon snow, the wear becomes much less than the growth. Hence the feet become deep at the heels and long at the toes. The walls of the heel, after having grown downward below the frog, have a tendency to bend or curl upward, the bars not being sufficiently strong to prevent it.

There is also a tendency to decay of the frog, especially when the stalls are not regularly cleaned, and the animal allowed to stand upon an accumulation of manure. This causes the colt to stand and walk in an unnatural manner, in many cases too much upon the heels, often with the toes turning more or less upward during each step. The heels continue to curl inward and lessen the space in which the bones and the sensitive parts are situated, and even at that age this predisposes to disease and may even cause it by undue pressure.

The position of the whole limb is altered, undue tension is forced upon the back tendons and upon certain ligaments of the joints, which tend to weaken and in some case actually to stretch them by continued tension, and the pasterns descend until the fetlock pad almost touched the ground. In some cases a colt is practically ruined for life for want of intelligent attention during the first winter.

The feet should be cleaned out regularly to enable the attendant to observe any disease of sole or frog and to remove stones, nails, and other foreign bodies that may be present, and while possibly not causing trouble or inconvenience would doubtless do so later on. So soon as the hoof becomes too large or abnormal in shape it should be cut and rasped down to the normal size and shape.

The heels should be kept well rasped down and the toe cut off, and of course the lower border of the wall should be rasped until the wall is of the proper depth. This trimming should be done once each month until the colt will spend the greater part of the time outside on bare ground, when the wear should be about equal to the growth, and no further trimming should be necessary until the next winter.

When the animal reaches the age at which he must wear shoes conditions change. The wearing of shoes is generally supposed to be the cause of much lameness. It is probably the conditions that necessitate the wearing of shoes, rather than the shoes, that are responsible.

If the work and the ground were such that the feet would not break or wear down to the sensitive structures, the wearing of shoes would not be necessary, and if shod horses were worked on such ground lameness would not be caused; but where horses have to travel on ground of such a nature as to necessitate the wearing of shoes the concussion is sufficient to cause or predispose to lameness of different natures. Careless or ignorant shoeing predisposes to and sometimes causes lameness.

When a horse goes lame there is a great tendency on the part of many owners to attach all blame to the shoeing smith. While in some cases the smith is to blame, it is a fact that in very many cases he is not in any way responsible for the trouble. Fortunately our country is fairly well supplied with intelligent shoeing smiths, who understand their business, often much better than the owners of the horses they shoe, and who are ready to ascribe the cause of all foot trouble to the unfortunate smith.

The principal points that should be observed in shoeing are to first trim the foot to the proper size and shape, being sure to have the surface that will bear upon the shoe level. In trimming the foot the sole should not be weakened, and the bars should not be cut down to a level with the sole. The partially detached portions of sole and bars should be removed, but very little more.

A shoe should then be made to fit the foot with as little burning of the horn as possible. The bearing surface of the shoe should be fit in order that a portion of the weight of the animal be borne by the circumference of the sole instead of allowing it all to rest upon the wall. Exceptions to this exist when the foot is particularly flat or convex soled, when the bearing surface should be beveled downward and inward with the exception of sufficient surface for the wall to rest upon.

When the weather is dry and the horse will not be required to go in slippery places or draw heavy loads, it is better to use a simple flat shoe or only moderate thickness in order to allow the frog to come in contact with the ground and support its share of the weight. When for any reason it is considered wise or necessary to wear calkins, they should not be higher than absolutely necessary. Probably one of the greatest mistakes is the use of too high calkins. This is principally noticed in heavy horses. High calkins serve no good purpose. They do not remain sharp longer than low ones, neither do they make the horse more sure footed on slippery roads. They elevate a horse too much and increase the danger of altering the proper level of the foot, which predisposes to sprain. Of course, there are many cases in which horses with undesirable peculiarities of action may be benefited by the application of shoes that would not be satisfactory on a horse of normal conformation and action.

Horses that interfere, speedy-strike, or forge require special shoes, and the smith is justified in trying to overcome the trouble by using shoes not of the ordinary desirable patterns. Taking it for granted that the horse is well shod, the question arises: "How should

(Continued on page 740)

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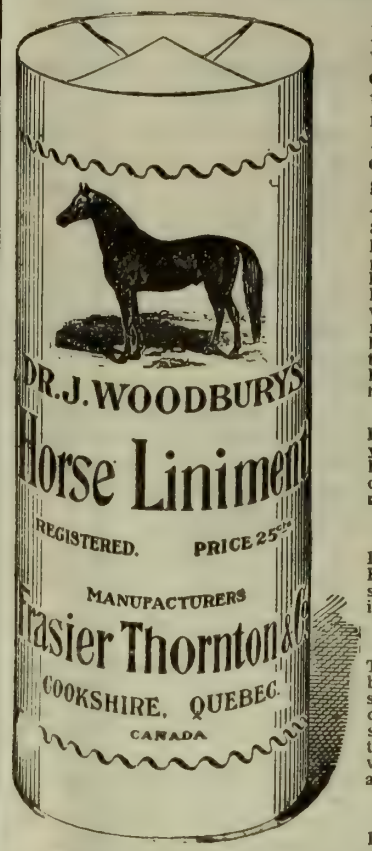
Dr. J. Woodbury's Horse Liniment

THE INFALLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.

Yours truly, Clarke Bros.

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Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.

Yours truly, C. C. McLean.

Truro, N. S.

This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.

Newton Lee, Owner "All Right" 5817.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

FRASIER THORNTON, &, CO., Limited, Manufacturers: Cookshire, Quebec, Canada.

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It is not difficult to secure a medicine that will effect movement of the bowels. To cure Constipation and the complications which arise from it is another matter.

Constipation of the bowels is usually preceded by torpid action of the liver. Hence it follows that if Constipation is to be cured the liver must be set right. And here lies the secret of the success of Dr. Chase's Kidney-Liver Pills. They awaken the action of the liver and insure a good flow of bile, which is nature's cathartic. The liver, kidneys and bowels are invigorated and regulated, and the troubles with the digestive system disappear.

Mr. H. M. Bell, Innisfail, Alta., writes: "For some considerable time I have been using Dr. Chase's Kidney-Liver Pills, which I have obtained through your firm. I suppose during my life I have used nearly all the best-known pills, as I have been subject to Constipation and digestive troubles. A friend recommended Dr. Chase's Kidney-Liver Pills, and I can honestly say that of all the pills I have tried nothing has suited me better—no griping—action always insured, and fine for the kidneys. This is how I have found them after a thorough test, and you may use this statement if you like."

This letter should convince you of the merits of Dr. Chase's Kidney-Liver Pills, but there is nothing like personal experience. If you do not feel like risking 25 cents for a box, write to us for a free sample box, mentioning where you saw this advertisement. Put this medicine to the test when you have indigestion, constipation, biliousness, backache or kidney derangements. The results will soon prove to you the superiority of Dr. Chase's Kidney-Liver Pills. One pill a dose, 25 cents a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto.

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POULTRY.

THE WHITE PLAGUE OF POULTRY

It is safe to say that at the present time there is no disease of poultry which causes in the aggregate anything like the total loss that roup does in the northern part of the United States. Roup is widely, indeed almost universally, distributed. Every one who keeps poultry long enough is sure sooner or later to have experience with one form or another of the disease. Its germs are probably carried not only by poultry but also by various wild birds, especially the English sparrow. The biologists of the Maine Agricultural Station have had opportunity not only to observe this dread disease in all its forms, but also to gain a very good idea of its prevalence through correspondence received at the station. The best cure of this disease is prevention. In order that prevention may be intelligently carried out it is essential to know something about the causes of the disease conditions which together go under the name of roup.

There are to be distinguished two diseases belonging to this general class of troubles, as follows: (a) Roup or contagious cartarrh, when only catarrhal symptoms are present; and (b) diphtheretic roup and canker, when diphtherial patches and false membranes are formed. Some workers consider these different stages of the same disease. It is also believed by some that sore head or chickenpox is also another form of the same disease.

The commonest form of roup, the nasal roup or contagious catarrh, attacks principally the membrance lining the eye, the sacs below the eye, the nostrils, the throat and the windpipe. The symptoms first seen are those very similar to an ordinary cold, but there is more fever, dullness, and prostration. The head is often very hot, the body normal or only slightly higher than normal. The discharges from the nasal opening is at first thin and watery, but in two or three days becomes thick and obstructs breathing. The inflammation, which begins in the nasal passages, soon extends to the eyes and to the spaces which exist immediately below the eyeballs. The eyelids are swollen, and are closed much of the time. They may be glued together by the accumulated secretion. The birds sneeze and shake their heads in their efforts to free the air passages from the thick mucus. The appetite is diminished, and the birds sit with their heads drawn in, wings drooping, with the general appearance of depression and illness.

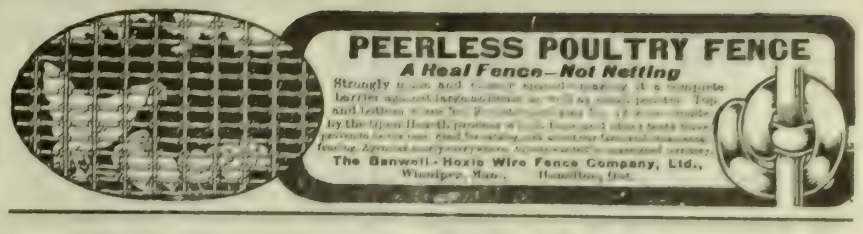
When the inflammation reaches the spaces or sacs beneath the eyes it causes the formation of a secretion very similar to that of the nose, and as this becomes thick it collects, distends the walls of these spaces, and produces a warm and painful swelling, which is seen just below the eye and may reach the size of a hickory nut. This swelling presses with much force on the eyeball, which is displaced and more or less deformed, and in extreme cases even the bones of the head may give away before it.

The closure of the eyes prevents the badly affected birds from finding food; the accumulation of mucus in the nostrils completely obstructs these passages, so that the beak must be kept open in order to breathe; the obstruction of the windpipe and the smaller air tubes causes loud breathing sounds and difficult respiration.

In the severe and advanced cases the birds sit in a somnolent or semi-conscious condition, unable to see or to eat; their strength is rapidly exhausted and many of them die within a week or ten days. A part of the affected individuals recover, but others continue weak and have a chronic form of the disease for months, during which time they continue to disseminate the contagion.

This disease is distinguished from diphtheria by the absence of the thick tough and very adherent newly formed membranes (false membranes) in the nostrils, mouth, and throat which are characteristic of the latter.

The course of roup is usually of long duration. A simple, putrid discharge from the nose may stoy in three or four days. But generally the symptoms last for months. When the eyelids become swollen and tumors appear the case is usually chronic. Affected birds may be better for a few days or weeks, and then become very weak again. Damp, cold weather usually intensifies the disease.



BREAKING BROODY HENS

To many it is a problem to break up broody hens. I have tried putting the broodies in a shady run with a vigorous cockerel. In this way I broke them up fairly well, but the method had its drawbacks, as many times the yard is needed for chicks or other fowls. At last I found a method that proved satisfactory. I put the broodies in an extra horse stall, put some roosts four and a half feet from the floor, scattered 3 or 4 inches of litter over the floor, and buried a limited amount of grain in the litter. I put in a young pig five to ten weeks old. He was always rooting around the floor. The hens did not care to sit. When Mr. Pig took an occasional snooze the hens were able to obtain some grain and water, at the same time exercising as they dug for the grain.—Harry T. Bates, in New England Homestead.

The editor of this journal has several hens in his flock that for clear, sheer persistency in clucking are hard to beat. So much so that unless one were very guarded in his remarks he might be tempted to say something that would not sound well in Sunday School. After trying all the anti-brooding devices he ever heard tell of, or read about, he finally used the following plan, which is working admirably in the most obstinate cases:

A light cord is attached to the hen's legs. The other end of the cord is made fast to some object in the yard. The cord is just long enough to allow the hen to gain shelter inside the hen house door, and yet with scope enough to allow her to rustle for her feed at the troughs with the other hens. Of course, she must be tied where she cannot fly into one of the nests.

SECRETS OF POULTRY SUCCESS

The secret of success in poultry raising lies first in getting pure-bred fowls of a known winter-laying strain and breed. The Light Grahma has grown to be the best breed in this respect around here, and every farmer who has tried it would have no other. To me it has proved to be the best I have ever heard of or tried.

The next step to take in getting eggs is to get an incubator and hatch early, as the early hatched birds is the best winter layer, and the incubator is the only means which will hatch the eggs on time. It is also less trouble to care for an incubator than for a dozen or two hens that are always fighting each other or stealing each other's nests.

The next step is proper housing. This does not necessarily mean costly or very warm houses, but a house that has plenty of air and sunshine and is simple and easy to clean. Another thing to take into consideration is proper feeds and feeding. I aim to do this as cheaply as possible, and use nothing but home-grown feeds whenever I can. They are the cheapest and even if a grower gets a few more eggs by feeding commercial foodstuffs the difference is more than made up by the higher cost of production.

For example, in my own case I have a flock of about 90 Light Brahma hens. From these I have had eggs all winter and during February have had as high as 40 eggs a day. The house is so cold that on cold days a pail of water will freeze solid in a few hours. It has good ventilation, however, and I have not had a frozen comb all winter, although the door has stood ajar day and night.

The only commercial feed which I have bought for this flock is one sack of bran and 100 pounds of oyster shells. Besides this they have always had a hopper full of ground oats before them. I have given them one peck of barley in 5 or 6 inches of litter on the floor every morning. It certainly cheers poultry men up to hear those chickens sing on a cold winter morning. As for drink, I give them water in the morning and slop from the kitchen in the afternoon.—A. A. G.

INCREASE PRODUCTION

A Chance for Every One to do His Bit

Mr. J. V. Jackson, of Moncton, President of the New Brunswick Poultry Association, has developed his Poultry and Produce Company into an incorporated concern, with seven well known business men as directors. The purpose is to multiply many times the productive capacity of the business to meet pressing demands. The Company owns 150 acres of land near Moncton, which is now used as a Poultry farm with splendid equipment. A large flock of Sheep will now be added. There is also an orchard of eight acres just coming into bearing age and a two-acre market garden. They have a warehouse in Moncton for sale of Produce and of Poultry Supplies and for the manufacture of their own special lines. Connections have been formed for a large Commission business. The Company wants this year to hatch 100,000 chicks from their incubators and to supply a great amount of poultry and Eggs to a hungry market. To do this they need some more capital and here is your chance to take a part in this good enterprise. They wish to distribute the shares of the Company widely for business reasons. So they are issuing Preference Stock, which will rank as a high grade security, and yet participate in the fine profits of the business. Before taking any dividend on the $12,000 they have already invested the directors will pay 7 per cent on all capital paid in for this new issue of stock and also give it equal rights in the distribution of surplus profits. The Preference shareholders are protected from any loss by all the present capital of the Company. As an investment for $100 or more this is a good proposition but you can judge it for yourself by getting full particulars. Anyone interested in increasing the productive power of the country or in getting a profitable place for some funds should write at once for a circular giving full information. Address: The Maritime Poultry and Produce Company, Moncton, N. B.

FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

THE RETURN HOME

"Hello, Phil. Digging away at the old farm yet?"

The speaker, leaning languidly against the fence, held a cigarette in the most approved style between his two forefingers, and occasionally puffed slowly at it.

Phil Dryden looked up from his planting, and responded: "Why, Ed, is that you? When did you come down?"

"Ran down last night on the early train. Taking a few days' vacation, and thought I'd like to see the old place." Phil glanced rather enviously at the well-dressed smoker, and then dropped his eyes a little shamefacedly to his own coarse, ill-fitting, and faded clothes.

"Why do you stay down here, Phil, and use yourself up on this old farm?" Ed Spencer continued. "I should think you'd go to the city and get a better job. If you hated farming as I always did, you would."

Phil's face flushed a trifle. The contrast between his appearance and that of his old school friend made him uneasy.

"I have thought of it several times," he replied slowly, "but there's so much to do here, and then——"

"Oh, shucks! You hate to make the plunge. So did I. But after the first break it's all so much better. Clean sailing then. I just picked up my things and made the start. And now—well, I'm going to get a raise next month, and then I'll take it easier than now."

"I suppose the work is pleasanter," Phil stammered, "and the pay is better."

"Better?" answered Ed, a little contemptuously. "Why, you get cash there for your work; but on the farm you don't. I'll bet you haven't seen as much money as this in a year."

Producing a roll of bills, the speaker flipped them carelessly through his fingers, exposing to view several of high denominations.

"That's what you get in the city," he continued. "It's cash—every week or month."

Phil said nothing, but his mind was feverishly active. Suddenly he asked anxiously: "I suppose it's hard to get a good position at first, isn't it?"

"Yes—and no. If you have influence it's dead easy; if you don't, you have to hunt around a bit."

Ed Spencer flung away his cigarette and added confidentially:

"If you're thinking of making the change let me know. I may help you. I know the ropes a little. Just send me word when you've made up your mind."

Phil kicked a lump of earth with the toe of his shoe. Ed seemed to comprehend the state of his mind, and asked smilingly: "How are crops, anyway—slow as ever?"

A flash of resentment appeared in Phil's eyes, for he knew the question was asked in well-bred derision.

"Oh, they're pretty good," Phil replied, with some dignity. "I'll harvest a good crop this season if——"

"If potato bugs don't eat up everything, and cabbage worms don't finish what's left," laughed Ed, as he turned to leave. "Well, I must be going. I want to see the old place and get back to the city soon's I can. It's pretty slow here."

He consulted a handsome watch which hung at the end of a gold chain.

"Remember me to Bess," he called over his shoulder. "I suppose she's well?"

When the two separated, Phil Dryden picked up his hoe and stood for several minutes staring at the retreating form. Contending emotions possessed him. The old rebellious spirit rose up to make his thoughts bitter and disquieting.

Life on the farm was a drudgery, he thought, and a dozen times he had secretly longed to leave it behind, to begin work in the city. The opportunity had never been presented quite so forcibly as today, and he felt that the decisive moment had come.

"I'll do it!" he firmly muttered after the space of five minutes of silent thought.

"I'll do it now. Uncle Ned can get along without me. He can hire some one else in my place. I've delayed too long already."

Thereafter the work in the field progressed slowly. Phil's mind was not on his work, and several times he had to repair damages carelessly done.

It was late in the afternoon, and Phil cut the day's work shot by an hour. As he trudged up to the old farm house his face was brightened by the thought of his newly formed plans.

"Hello, Bess!" he called, as a slim girl of sixteen met him.

"You're back early, Phil," Bess replied. "You can't expect supper yet a while. Why, the sun is an hour high."

"Oh, I'm not after supper," the boy sponded. "I've made up my mind to quit for good. Bess, I'm going to the city."

His sister stared at him in amazement for a moment. Phil continued in explanation of his sudden announcement: "I'm going to get a position in the city and leave the farm for good. I've just had a talk with Ed Spencer, and he says he can get me a position when I want it."

"Ed Spencer! Is he home again?" asked Bess.

"Only for a fe wdays. He can't stand it here much longer than a few days at a time—it's so slow. I don't blame him, either, for it is slow—terribly slow and dull."

The boy removed his hat and wiped his forehead.

"But, Phil, if you go to the city what will become of me?" queried his sister, in a weak voice.

"You? Why, can't you stay here with Aunt Matty and Uncle Ned?" There was genuine surprise in the boy's voice, and this was increased when he saw that Bess had turned a shade paler than usual.

"Oh, yes, I suppose I could stay," was the quiet answer; "but did it ever occur to you that I might be lonely, and—and——"

There was a suspicious weakness in the voice, and when it grew husky the girl stopped and turned her face away.

"Why, Bess, I don't see—why, in time I'd take you to the city, too. I'd get a good position and work up in it, and then we'd live there together."

"Yes, but how many years would I have to wait?' resentfully replied the girl. "Do you think Ed Spencer could support his sister? And, if he could, why doesn't he? I'm sure she has a hard enough time to pinch along."

"But," began Phil, in self-extenuation, "I'm not like Ed in some respects, and——"

"No, and I'm thankful you're not," interrupted Bess.

A glow of pride made Phil quiet and more thoughtful. He remembered now that Ed's sister worked hard at dressmaking, besides her duties on the farm, to make both ends meet. In a dim way he seemed to remember several of Ed's selfish ways when they were school companions, and he admitted that he did not treat his sister very liberally. The flash of the roll of bills appeared before his mind, and he wondered if Ed would present his hard-worked sister with some of the money. Probably it was all for her—a birthday present perhaps, for Mandy was sixteen that month.

"Ed, Ed has his bad points," he replied, "and so has every fellow. But he's doing well in the city, and I don't see why I shouldn't do as well. I was always smarter in my studies than Ed."

"Yes, and in everything else," loyally responded Bess.

"Then why shouldn't I go to the city and make something of myself? I can never do it here."

"Phil, I don't think you would do much better," protested Bess. "In a few years now you—we—will have the farm all to ourselves. Uncle Ned and Aunt Matty must turn it over to us—they only hold it in trust until you become of age, you know—and they'll be glad to get rid of the responsibility. Then we can——"

Phil kicked viciously at a stone. This sort of argument did not please him.

"But, Bess, there's no money in farming," he interrupted. "Uncle Ned says that, and everybody else. What's the use of killing yourself on the farm for nothing?"

"But what would you do with it?" gasped Bess in surprise.

"Oh, sell it, or—or let Uncle Ned run it until I become of age. Then"—a new light shone in his eyes—"then the money will start me in business. I'll have the experience, and—and——"

"Oh, Phil!" exclaimed Bess, in a pained voice. "How could you sell it?"

"Why not," stubbornly asked Phil.

Bess did not reply. If he could not understand the sacredness of the associations that clustered about the old homestead she could not make him. She turned abruptly and walked away, but not until Phil saw a tear glistening in her eyes.

"Girls are so funny and—and—unreasoning," the discontented boy remarked aloud.

Phil was strong-minded and determined in his way. Once his mind was made up it was difficult for him to change his point of view. For three years now he had been steadily drifting toward this important decision. He longed for the city and wished to make his mark in a wider field than farming.

"Bess will be terribly disappointed at first," he reasoned, "and she'll be lonely the first month. But she'll soon see the wisdom of my way. When I can take her to the city she will have a happier time of it than here."

Nothing further was said of his change of plans for a few days, but Phil could not fail to notice the change in Bess' appearance. Her face was pale and drawn, and the eyes looked as if she had spent sleepless nights worrying over the matter.

"I wish she wouldn't take it so to heart," Phil reflected more than once. Then a little irritably, "Girls expect so much of brothers. They want to tie them down to their apron strings."

This sort of argument did not tend to convince Phil of his mistaken line of thought.

A week later he had fully made up his mind to carry out his long-cherished plans. One afternoon he walked over to the old Spencer home to get Ed's city address. He would write to his old companion and find out what he could do for him.

The Spencer home was a tumbledown, neglected farm of not a great many acres. The only one of the family, in Phil's estimation in the past, was Mandy; but the odds were against her in the uphill struggle, and today Phil's heart beat sympathetically for her.

She was pale and thin, and a worried expression marked her face. At the sight of Phil she flushed and tried to straighten out the stray locks of

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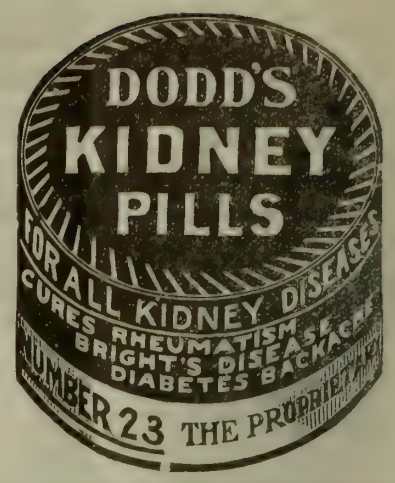

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Lydia E. Pinkham's Vegetable Compound, a pure remedy containing the extractive properties of good old fashioned roots and herbs, meets the needs of woman's system at this critical period of her life. Try it.

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THE CANADA STARCH CO. LIMITED, MONTREAL. 278

hair on her head and to arrange her faded dress.

"I've been so busy," she apologized, "that I've hardly had time to fix up decently."

Phil laughed and tried to make her feel at ease.

"I've come over to get Ed's address in the city," he said pleasantly, after a few moments of conversation. "I want to write to him."

"I'm not sure I have it," Mandy replied, blushing deeper than before. "Ed has changed it several times lately. He doesn't seem to stay in one place long."

"I've always heard that they moved often in the city," Phil answered. "I suppose he's rising so rapidly that he has to change every little while to better quarters."

Mandy tried to laugh at this suggestion, but it was a poor attempt.

"Ed is very restless," she ventured finally. "He lost his old position, you know, and I don't know whether he will like his new one."

"No, I didn't know he had lost the old one,' 'returned Phil slowly.

"Yes; there was something that—that—well, Ed is very restless. I wish he was nearer home, so I could look after him a little."

"I think all sisters want their brothers under their wings," replied Phil, with a laugh. "Bess now doesn't want me to go to the city to work."

"Are you thinking of going?" quickly asked Mandy Spencer.

"Yes; that is, Ed said he could get me a position if——"

Mandy dropped her sewing, and with flushed cheeks and sparkling eyes, said vehemently: "Please don't go then, Phil, for Bess's sake and mine."

"Why—what——"

"Well, because—we'll miss you—and then you'll be happier here. Ed is not doing as well as you think, and——"

"I'm not so sure of that. He seemed to have plenty of money with him last week. But I suppose he gave it to you for a birthday present."

"Birthday present! Oh, did you remember that my birthday was last week? I'm so glad. I thought——"

"Didn't Ed remember it?"

Mandy bent over her work and made no reply. She was too loyal to make any confession that would reflect upon her brother.

When they parted a few minutes later she took Phil's hand and said earnestly: "Please do not less Bess—and me. We would miss you so much, Phil."

Phil walked home in an uncertain state of mind. Somehow his desire to go to the city had cooled down, and the sight of two anxious faces made him hesitate.

"Ed is about as selfish as ever," he acknowledged. "A fellow with all of his money who doesn't remember his only sister's birthday is a good deal of a—a——"

He didn't finish the sentence, but he knew pretty well in his own mind what he meant. Suddenly he stopped in his walk. A strangely unpleasant thought occurred to him. Was he also selfish and thoughtless because he ignored Bess's wishes and desires? No; a boy had to make his way in the world even if he did sacrifice the old homestead.

Phil deferred writing his letter to Ed for a full week. Then something happened that made it unnecessary. In one of the city papers there was a small news item tucked away in a corner that greatly excited the people living at Greenville. It was no less than an account of the arrest of Ed Spencer for robbing his employer.

The details of the case were not given, but one could read on the surface the old story of temptation, weakness, and final failure. Phil's heart nearly stopped beating. He could not show the paragraph to Bess, and in his heart he hoped that no one in Greenville would see it.

But this was a foolish wish, for within twenty-four hours the news had spread all over the village and the farming section. Phil thought of Mandy. How would she take it? How would Bess take it if he were the prisoner?

"Oh, Phil, suppose it had been you!" exclaimed Bess when she heard the news. Then, blushing deeply, she threw her arms around his neck, and stammered: "But of course I know it couldn't have been you."

Nevertheless she sobbed rather nervously for a few minutes, until Phil was tempted to say:

"I don't know, Bess, I—I might have fallen, too. Who knows?"

"No no!" protested Bess loyally.

Phil picked up his hat and strode toward the door.

"Where are you going?" she asked.

"I'm going over to see Mandy," was the reply.

Without further explanation of his sudden resolve, he walked across the fields until he reached the Spencer home. Without waiting for any formality, Phil entered, and caught the girl curled up in a heap, with her sewing scattered in a hopeless mass round her.

"Mandy!" he said softly.

She raised dull red eyes to his.

"Mandy," he repeated, "I'm going to the city."

"Oh, Phil!" she cried.

"I'm going," he continued, "to see what I can do for Ed. Then I'm coming home to stay."

"If Ed had only stayed," she moaned.

"He will come back—in time," Phil replied.

The girl raised her head and laughed hysterically. "Yes, now he will come home," she said wildly, "and nobody will have anything to do with him. He won't be able to get work again, and we—we shall have to move away."

Phil twisted his hat nervously, but his voice was clear and firm when he spoke. "He will always be the same to me, Mandy, and if—if he'll work on the old farm with me he'll never lack employment. I'm going to stay on it, and keep Ed, too. Maybe in the end it will be a good thing for both of us. We'll make better farmers for the—the experience.

Something like a hopeful expression entered the stricken girl's eyes.

"Phil, if—if you could bring him home now, I—you know, they're not going to drosecute him? Mr. Barrows has discharged him, but he will not have him imprisoned for the—the——"

"I understand," Phil replied. "I shall bring him home right away, and we'll run this farm together."

The door suddenly opened, and Bess appeared on the threshold.

"Bess!"

"Mandy!"

And the two girls were sobbing in each other's arms. Phil looked on with wet eyes, and then whistled softly.

"I guess," he said finally, "with two such sisters, Ed and I ought to keep straight. If we don't, we deserve something worse than a thrashing, and I'll be the one to do the licking."

"Why, Phil, what are you saying?" demanded Bess, wiping her eyes. "You've been takling to yourself while we—we were——"

"Acting like two silly school girls," prompted Phil. "But I'm off now. I'm going to the city, Bess—going at last."

"To stay?" demurely asked Bess.

"Until I can bring Ed home," responded Phil, as he pulled the door softly shut behind him.

EATING AND DRINKING

It seems to be a well-established fact that, as a rule most of us live to eat rather than eat to live. If we would but change about there would be a vast increase of health, prosperity, and happiness throughout our land today.

It takes a little self-denial and a good deal of backbone to cut out these foods of which we are fond, but which do not agree with us, even though we know the result will be a headache, sick stomach, or some kindred ill.

A lady of my acquaintance, who is very fond of the good things of life, will come home with a supply of candy, fruit, fancy cakes, etc., and sit down for what she calls a "feast"; then, when it is over, she will laughingly cry: "There, I expect I'll be sick tomorrow, but I will take a pill tonight!" Half her days are spent either in bed or on the couch, while her husband works early and late to pay the bills for doctors and hired help, and a hired girl rules supreme in the kitchen because the mistress of the house is not able to overseen even the arrangements of her house and home.

Long indulgence in highly spiced, over-rich foods has given us a perverted appetite, and so we go on catering to it and paying all we earn, or nearly all, to the doctor and the druggist. And when overworked Nature calls a halt, and some morning we get us sick and faint, our stomach rebelling at the mere thought of food, instead of following the right course and giving it a chance to rest, we immediately set to work to think up something new to "tempt the appetite," and the inevitabl result follows that, instead of an illness of perhaps a day or two, while the overworked forces of the system are recuperating themselves, we spend days of sickness and pain, if nothing more serious intervenes, before we regain a part of our former strength and activity. It won't hurt anybody to go without a few meals, drinking plentifully of hot water in the meantime, for it is Nature's own remedy and is by far a better medicine in most cases than drugs.

Most of us get to the point where we do not feel satisfied unless we are overfed.

"Do you know," a young woman said to me yesterday, "that when mamma was sick last week, and I had the work and cooking to do outside of office hours, I really didn't have time to eat as much as usual, and I felt fetter, in spite of the worry, than I have for a long time. My work even went better. I seemed clearer-headed, lighter, some way, more fit. But this week mamma is doing the cooking again and every-

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During such times as this the value of a convenient and concentrated food that may be carried and handled easily, cannot be over-estimated.

Queen's Dessert Chocolate answers all the requirements of such a food. It is the most nourishing and wholesome chocolate manufactured. If you are unable to obtain this chocolate in your locality, write us, we will see that you get it.

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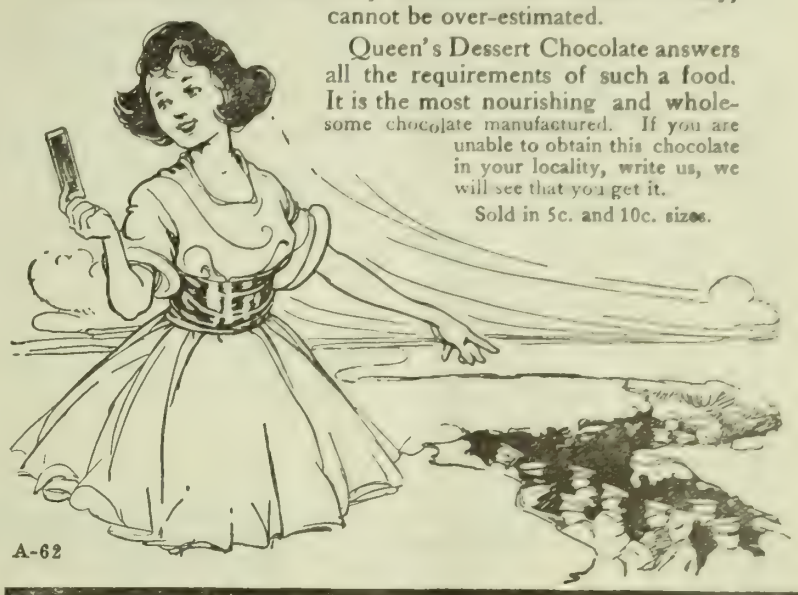

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GOT DIARRHOEA FROM DRINKING BAD WATER.

People moving from one place to another are very subject to diarrhoea on account of the change of water, change of climate, change of diet, etc., and what at first appears to be but a slight looseness of the bowels should never be neglected or some serious bowel complaint will be sure to follow.

The safest and quickest cure for diarrhoea, dysentery, colic, cholera, cholera morbus, cholera infantum, pains in the stomach and all looseness of the bowels is Dr. Fowler's Extract of Wild Strawberry.

Mr. Ernest Jeffery, Moose Jaw, Sask., writes: "A few years ago, when I first came out to Canada, I went to the harvest field to work. Somehow or other the water did not agree with me. I had the darrhoea so bad that blood was coming from me, and I thought my last days had come. One of the harvest hands advised me to take Dr. Fowler's Extract of Wild Strawberry, and before I had used the bottle I was able to go to work again. My advice to all is always keep a bottle of this wonderful diarrhoea cure on hand."

"Dr. Fowler's" has been on the market for the past seventy years, and has been used in thousands of Canadian homes during that time, and we have yet to hear of a case of bowel complaint where it has not given perfect satisfaction.

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thing tastes so good I am eating all I can hold, and it's the same old story. I'm loggy and lazy and dull."

And it is exactly so. Nine-tenths of the sickness of today is, I believe, caused by overindulgence in eating and drinking those things that appeal to our taste, but which for the most part merely overtax the system, resulting in a slow poison which deadens the faculties, saps the strength, undermines the constitution and leaves us fit subjects for disease.

If you, busy housewife, will cut out the rich pastry, the highly spiced, indigestible foods, and substitute instead good plain nourishing homely fare, spending part of the time thus gained in an honest study of food values, you will find the health of each member of your family will improve, as well as the happiness of your home increase, for good health brings happiness close in its trail.

Chew every mouthful of food thoroughly until it becomes a liquid and disappears without volition of your own. Talk it to the older members of your family, and teach it to the children. You will find you do not require as much as when you eat hastily, only half masticating your food, and very soon you will not miss the sweets, as the system becomes better nourished and accustomed to the change. The taste will gradually become once more normal and natural, and you will enjoy your plainer fare as much as you did the former one.

Few of us drink enough water, and far too much tea and coffee. If you must have (or think you must) tea and coffee, be sure they are freshly made each time of serving, and never allowed to stand from one meal to another; and do not deglect to wash and scald the pots in which they are made after each using.

If you would be in the very pink of condition, do not drink any alcoholic drinks whatever. In a recent article by Dr. Cabot, he classes them as simply a form of drug, and one of the worst. Drink plenty of water between meals. Eight or ten glasses a day is none too much. It will save many a doctor's bill. Teach the children that it is necessary to their daily lives. Eat much fruit, for it supplies the system with the natural sugars and salts which it requires, as well as enriching the blood and filling the whole being with new vigor and power.—L. D. Stearns, in Maine Farmer.

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FIRST AID TO THE INJURED

That "a little knowledge is a dangerous thing" is an old adage of considerable truth, but the occasion may arise when some knowledge of the first aid to the injured will not only relieve suffering, but be the means of saving a life.

So important has become this kind of training that the corporations and large industries where life and limb are constantly in peril are training first-aid corps at considerable expense. First aid is not intended to replace the doctor and I must warn you to not depend upon what bit of knowledge you may have acquired to direct the treatment of other than the very simple little injuries.

First aid is the doctor's assistant, and the good results from this knowledge are frequently not so much what is done as what is not done.

Injuries and wounds that are sterile are very often infected through ignorance. The loss of a little blood may be of no consequence as compared to the dangers of blood poison from binding up the injured member in a soiled handkerchief. Many times have workmen removed a germ-laden chew of tobacco from the mouth and placed it in a cut which was made by a tool with a polished blade practically free from germs. Cobwebs were famous in the olden days to stop bleeding, and yet it has been discovered that the germs of lockjaw are very frequently found in them.

When the skin is broken the gush of blood will frequently wash away the infected matter and the wound be practically sterile, until some smypathetic soud, with a heart much bigger than his knowledge of asepsis, literally fills the wound with germs in an effort to stay the crimson flow.

Unless you have been trained to a knowledge of what to do and what not to do, you had much better keep hands off.

Germs are sociable creatures, and the dangerous kinds are rarely found except in the social centres. For this reason injuries in cities are fraught with greater danger of serious complications. If those living in the country do not escape many of these complications it is chiefly because of meddlesome treatment through ignorance of the use of asepsis and antiseptics.

An antiseptic is a substance that will kill or hinder the growth of germs. Many kinds are used by doctors, and all of them are poisonous when taken internally.

To sterilize is to destroy the germs, and this can be accomplished either with antiseptics or by boiling. Anything that has been well boiled for a half hour is sterile and will remain so until it has been reinfected by careless handling or exposure. It is useless to sterilize a bandage if it is to be immediately infected by unclean hands.

Surgeons have leanred that hands cannot be perfectly sterilized, and all operators now wear rubber gloves that can be boiled.

I have known men in the harvest field to tear the sleeve out of a sweaty shirt to bind up an injury, and by so doing maimed for life the unfortunate victim by infecting him with the germs of blood poison which otherwise he no doubt would have escaped. A much better treatment would have been to allow the bleeding to cease of its own accord, leaving the wound exposed to the air until the doctor arrived.

It is not easy to bleed to death. But if the flow of blood is too abundant the emergency must be met with the means at hand. If a serious hemorrhage occurs in the arm or leg a band or handkerchief should be placed above the injury, near the hip or the shoulder, and a stick twisted in it, making pressure until the bleeding is controlled. Small cuts and wounds should have tincture of iodine painted into the wound and bound with a sterile bandage or old muslin that has been boiled.

The rusty nail bears a nasty reputation in the country, and the punctured wounds it leaves are very dangerous because the rough surface of the nail carries the dirt and germs into the deep tissues, making it difficult to cleanse. Never put a poultice on such a wound. It is the one thing you should not do. Nothing can draw the poison out of the wound, for there is no poison to draw out other than the germs, and a poultice ony aids their development by shutting out the air. If you must do something, pour the wound full of tincture of iodine. If in a few days it becomes painful and inflamed, go at once to a good doctor.

For a bruise nothing can equal hot water. Almost boil the injured part for one or two hours at a time by placing it in a hot bath, repeating it several times a day. You cannot use too much of it. It is tiresome work, but it will give results. Liniments have a very limited usefulness, and many times they appear to delay recovery.

Burns should be covered with baking soda or oil of some kind, and if it is a large and serious one a mixture of linseed oil and lime water makes a suitable and soothing application until you can get medical aid. If a bone is broken sticks should be firmly tied along the limb to prevent further injury to the flesh in moving the person.

Boils require heat and moisture to bring them to a head, and nothing is more suitable for this than a poultice. The requisites for a good poultice are nothing more than heat and moisture. The kinds of material of which it is made are of little consequence so long as it is large and kept hot.

In the care of all kinds of injuries, remember that nature will effect a cure provided the germs are kept out or their growth controlled. The best way to keep the germs out is to keep soiled hands and dirty rags away from water and soap, using a nail brush libthe injuries. Hands washed in hot water and soap, using a nail brush liberally until thoroughly scrubbed, rinsed in plain water, and then well rubbed with alcohol will be prepared for dressing an injury. After the dressing the same process should be repeated to protect the one doing the dressing from a possible infection.

Never seal up an injury so that the air cannot dry the secretions. Adhesive plaster covering a wound retains

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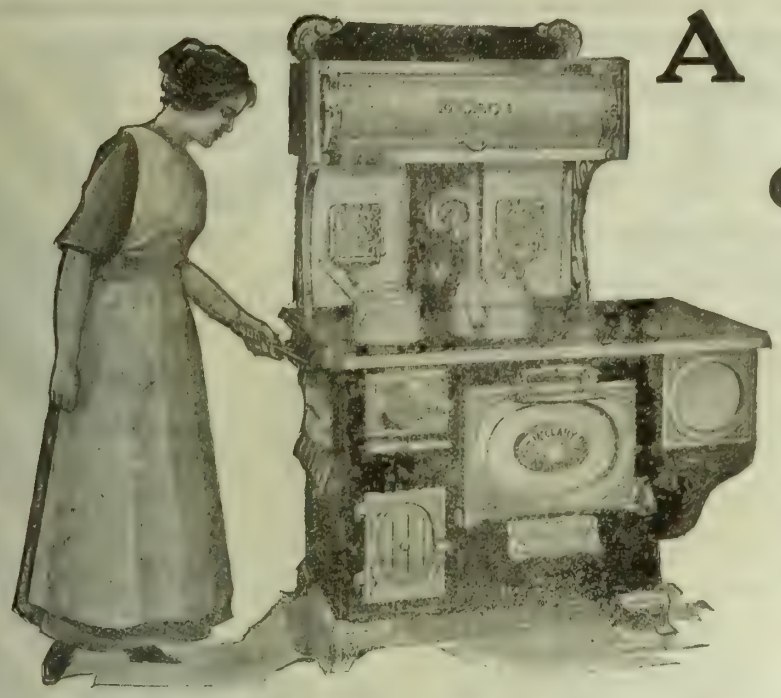

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the moisture and favors germ growth, whereas if it is wrapped lightly with gauze or thin muslin a scab will form, shutting out the germs.

Wounds from gunpowder and explosives are usually best cared for when eft exposed to the air, and because of their serious nature they require very careful treatment. It is unsafe for you to attempt to care for them. Go at once to the best surgeon you know, or to a good hospital.

In the treatment of all kinds of injuries, remember that germs cannot multiply except when moisture is present. Do not forget that all pus is due to germ growth. Heat and hot applications favor pus formation, while cold retards germ growth, and therefore tends to prevent the formation of pus. —J. J. Clarke, M.D.

POTASH IN WOOD ASHES AND FELDSPAR

Hardwood ashes contain from 18 to 46 per cent of potash, while ashes from conifers contain from 14 to 20 per cent. The yield of ashes from wood is about 1.6 per cent in weight, and one cord of wood weighs approximately 2,100 pounds. Assuming that four-fifths of the potash in the ashes is leachable, the amount of wood containing 15 per cent of potash is four pounds.

The present price of potash in trade centres in the United States is nominal. The rate per ton is quoted at from $400 to $500, but none is available. The price for the most common form, the muriate, or chloride, containing 80 per cent of the pure salt (equivalent to 52.7 per cent of K2O) was $38 per long ton in July, 1914.

Canada possesses many deposits of feldspar with potash contents ranging as high as 15 per cent, thus constituting a considerable resource of potash if an economical process of extracting it can be developed.

Several chemists are actively engaged upon this problem in the United States. Chemically it has been solved, but capital is still hesitant about investing heavily in any of the dozen promising methods which have been worked out on a scale little beyond simple laboratory experimentation.—W. J. D.

HOW TO PREVENT FIRE

Keep waste paper, packing material, and rubbish cleaned up.

Make frequent personal inspections from a fire standpoint

See that your electric wiring is standard, and be careful in the use of electric devices.

Have all smoke pipes and chimneys inspected and properly repaired before starting fires for the winter.

Be careful about the use of matches. Provide safe receptacles for them both before and after use.

Feel your personal responsibility as to possible loss of life and property by fire, and act accordingly.

KEEP AWAY RUST

When machines are laid up for a time, such as farm machinery, the parts not actually painted should be coated with a rust preventative. Such a substance should have the qualities of cheapness, ease of application and removal, and not be injurious to the coated surface.

A good and inexpensive coat may be made by mixing flour with common machinery or lubricating oil. This mixture should have a consistency of thin paste. It may be applied with a paint brush. The flour keeps the oil from drying hard, and the oil will prevent the air and moisture from coming into contact with the surface of the parts treated, thereby preventing rust or corrosive effects.

KEEP COWS COMFORTABLE

I have seen cows turned into the pasture without a sign of shade trees or anything else with possibly a pond or creek filled with sluggish water where they will stand and drink and fight off the flies. Such conditions as these are deplorable and are bound to result in a decreased flow in the milk which if brought back again at all will be at considerable expense. Good cows can be made poor milkers by such treatment. To keep the cow in the best of health and enable her to produce good pure butter fat she must have an abundance of fresh water.

FEET OF HORSES—THEIR STRUCTURE AND CONDITION

(Continued from page 734)

his feet be treated in order to minimize danger of disease?" Practically all that the driver can do is to see that the shoes are removed and reset at periods of four to six weeks, according to weather and general conditions.

In the interim he should clean out the sole of the feet once or twice daily, and when necessary supply moisture. Moisture, and plenty of it, is necessary to keep the feet in a healthy condition. During wet weather or where horses are on pasture at night, sufficient moisture will regualrly be gathered from rain and dew, but during hot, dry weather horses that are kept in the stable must in some way have moisture supplied to the feet, else they become dry, brittle and hot, have a tendency to contract and cause or predispose to disease.

Many kinds of hoof dressings are on the market, but it is doubtful that they do much good other than improving appearances. Water is what is needed and this must be regularly supplied. This may be supplied by soaking pads, poultices, standing the horse in a tub of water for a few hours daily, standing him in wet clay or running water, or stuffing the feet with clay, rock or other substances that retain moisture for considerable time.

Any way by which either the wall or the sole may be kept in contact with water for at least a few hours daily gives good results. As a means of lessening concussion in horses driven on hard roads, the wearing of rubber pads answers well, but these should not be worn constantly, as they tend to prevent admission of air to the soles and to cause disintegration of frog and sole.

In a few words, we say: Keep the feet level and in as natural a shape as possible. Shoe so as to give even pressure on the wall and junction of wall and sole, and if possible on the frog. Keep sole and frog free from foreign matter, supply moisture, and have the shoes removed in, at most, every five or six weeks.

PURE BRED COW WILL GIVE GREATER PROFIT THAN GRADE

(Continued from page 723)

equal quality. Although profit is the prime requisite of a good dairy herd, it is not the only one. There enters into breeding and rearing of live stock a certain element of refinement. Drive through the country and you can usually locate the farms on which pure-bred stock is the specialty. As it is with the farm, so it is with the man who breeds pedigreed stock. There is a fascination about developing young stock. What type of offspring will a certain mating give? This fascination ripens into pride when one of your own breeding brings a long price in the sale ring or draws a ribbon in the show ring, or perhaps one of your heifers makes the advanced registry with a fine record. When a man is conducting a reliable business, making a good living and a fair profit, when he is able to sell his stock to his best neighbor at a good price without a twinge of conscience, knowing that what he sells is as good as the best, then he comes nearer to realizing the meaning of the word "satisfaction" than does the millionairse whose wealth is the result of child labor in a sweatshop.

A raised platform for the water pail will insure a clean water supply in the poultry house. Water dishes placed on the ground are soon scratched full of litter and this may result in sick birds. Scalding the water dishes at least once a week will pay, and may prevent cases of sickness during hot weather.

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CHAIN BARGAIN

THE T. EATON CO LIMITED TORONTO CANADA

PLANTING WITH DYNAMITE

Hardly a week passes that we do not receive some contribution to the sum of experiences of those who test the advantages of tree planting with plow and spade as compared with the trees for which the holes have been blasted with dynamite.

These experiments are always of interest, and we shall be glad to hear from any of our subscribers who are gathering experience along this line. Up to date the evidence is in favor of the dynamite-planted trees. "The old order changeth, giving place to new," not because it is new, but because it secures better results. The latest information we have on this subject is especially valuable as coming from T. M. Gathright, a well-known soil expert. He says:

"I used dynamite in preparing for planting on the properties of the Virginia Crown Orchard Company. Several thousand apple trees were set in holes prepared by blasting, and several thousand others where the holes were dug.

"These plantings were made three and four years ago. In June, 1915, the trees set with dynamite appeared to be at least two years older than those where dynamite was not used.

"From my own experience and observation, I would not consider planting any kind of tree without first blasting the soil."

This is strong endorsement, and growers who are still unconvinced that the new method is preferable to the old can easily put it to the test. Of course, the claim of the dynamite enthusiast is that the plow and spade fail to break up the soil deeply enough to give the roots a chance to grow without a devitalizing struggle, and that the dynamite prepares the ground properly to store moisture and makes better drainage.

KEROSENE EMULSION WILL "GET" PLANT LICE

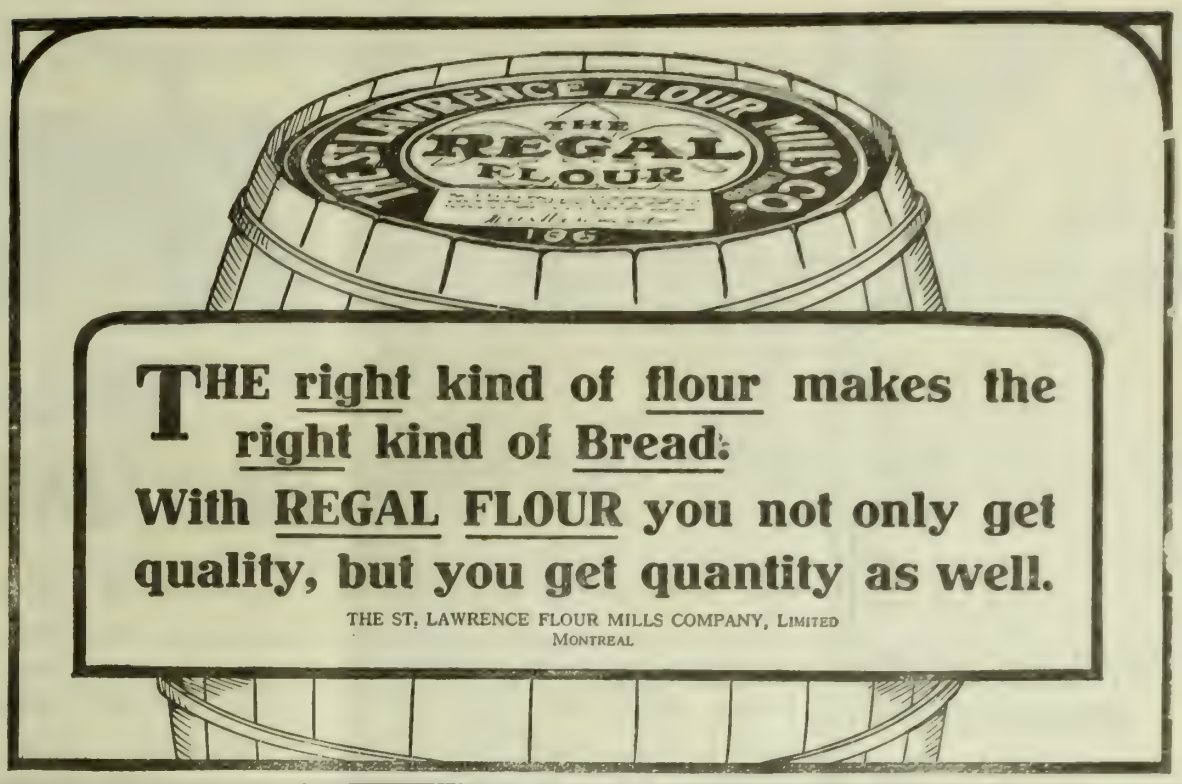
The cheapest, if not the best, of the insecticides that may be used for the destruction of plant lice upon the foliage of garden plants, shrubs, or trees is kerosene emulsion if properly prepared.

To make a good emulsion use soft water and any cheap laundry soap, and prepare as follows:

Dissolve one pound of soap in one gallon of water and heat to the boiling point. Remove the soapy solution from the fire and add two gallons of kerosene and immediately agitate the mixture as briskly as possible, either by means of a small force pump to drive the liquid back into itself in the bucket or by some other method. When thoroughly emulsified, which should be within two or three minutes after the agitation is begun, dilute to 30 gallons with soft water, and apply. In small quantities the emulsion is easily made by the use of an egg-beater. As this preparation kills only by coming in contact with the insects, care must be taken to throw it forcibly so as to strike tehir bodies.—C. P. Gillette, Colorado Agricultural College, Fort Collins, Colorado.

CALCINED BONES FOR FOWLS

Bones are valuable for feeding laying hens and growing chicks, principally because they contain lime and phosphorus. Raw green bones also contain protein and fat, but the bone meal of commerce has had these elements of nutrition boiled out of them before they were ground. On almost every farm there are bones lying around bleaching in the sun, an eyesore to every one. If these bones are gathered up and calcined by burning them in a pile of brush or other refuse until they are brittle and easily broken they make a very valuable feed for fowls. Burning does not change the lime and phosphorus in the bones.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I feed my hens the meat from fresh beef heads. The bones from these heads are calcined until they are thoroughly charred in the furnace used in cooking the heads. Then it is an easy matter to break them with a hammer, using a flat stone on which to break them. They are broken until a hen can swallow the smallest fragment and are eaten greedily. Some parts of the bones are charred, and this charcoal is as good as any other in absorbing gases and correcting acidity in the stomach. By using these bones I save the cost of buying them at about $3.50 per cwt., and obtain a better feeding material than the cracked bone sold in the stores.—Miller Purvis.

ADVERTISING TO HELP SALES

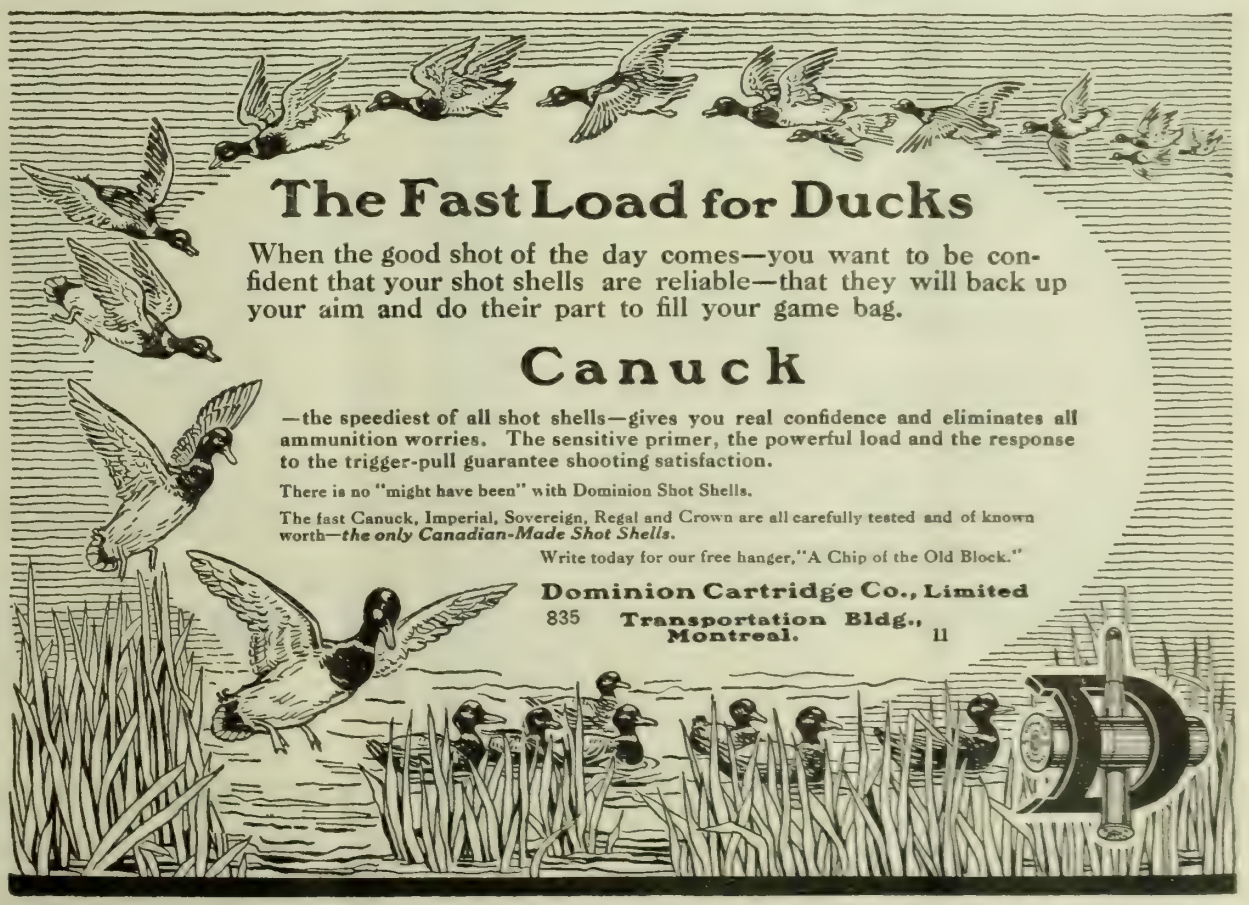
I have solved the marketing question by bringing the market to my door. When my chickens reached the proper size I advertised in the local paper, which brought customers right to my door. Now I buy up young chicks of my neighbors, put them in a large shady pen, feed plenty of grain and green stuff, and keep fresh water before them at all times, thereby insuring good health. In this way I am able to market those which are fat and free from vermin.—Mrs. J. Martin.

BUTTER MAKING IN SUMMER

No other one factor is so important in producing good butter in summer as proper control of churning temperature. When cream has been correctly soured it should be cooled down to the approved temperature for churning and held at that temperature at least two hours, to allow the fat to become cool and firm enough for proper churning. Churning temperatures vary widely, but much farm butter is made at too high temperatures. It is never advisable to churn warm cream, because it is necessary to cool the butter with ice water or very cold water before it is worked. The result is loose, calve-like butter.

At the time of year when cows are fresh and feeds succulent the butter fat is naturally softer than later in the season; hence a lower temperature, or from 52 to 56 degrees, should be used. Experiments at the Pennsylvania state college see mto indicate that the lower temperatures are to be preferred, as the butter is firmer when it comes from the churn, does not easily incorporate buttermilk, and will stand more working. Thorough working produces a better body and more uniform quality. Under average conditions cream should require from 20 to 30 minutes to churn. A shorter period indicates that the temperature is too high, the result of which will be inferior butter.

The farmer nowadays is too busy to listen to brass-band publicity, but he always has time to read bracc-tack advertising.—The Farm Journal.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More Money in Milk

The amount of milk that a cow can give, depends, first, on the *breed*—and second, on the *feed*.

But—make no mistake about this point—a blooded Holstein fed on turnips, mangels and hay will have a hard time to keep up to an ordinary, scrub cow, carefully cared for and fed either a balanced ration or one containing an excess of *Protein*.

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Write for a copy of our book and study these interesting feeding facts—the book is sent free on request. 302

The Canada Starch Co. Ltd., Montreal.

DROOP IN RUMP OF JERSEY CATTLE

The following article was presented to the Jersey Bulletin by Mr. Robert Wylie, a Jersey breeder of Ohio, taken from his thesis on "The Relation of Type and Conformation to Production in Dairy Cattle," which was prepared as a requirement for Mr. Wylie's master's degree at the University of Missouri last year:

Probably no one point of conformation has been given more attention by breeders of Jersey cattle than the droop of rump. In the show ring an animal possessing a rump that does not carry out fairly level is generally discriminated against, and breeders have set forth as the idea type of Jersey cow one that carries out level in this region. In order to determine whether there was any relation between the droop of rump and the production of cows, the author measured ninety-six Jersey cows holding yearly records. These cows belonged in the same cow-testing association, and their records were made at approximately the same period of time. The range in production was from 121 lbs. to 537 lbs. of butter fat. The purpose of measuring cows in a cow-testing association in preference to Register of Merit cows was to do away with extremes in the conditions under which the records were made, and at the same time to get some cows having ow records.

It was found that the cows with the greatest droop of rump had a higher average production than the cows with rumps that carry out level. Especially was it true that those cows with rumps that approached nearest the ideal of the breeder were low producers on the average. Some of the cows with the largest records had the most drooping rumps, and some cows with the most level rumps had low records. On the other hand, some cows with level rumps had high records, and some with drooping rumps had low records. There appeared to be no relation whatever between the droop of the rump and the production of individual cows, but when records of a number of cows were averaged together those cows with the most level rumps had the lowest average production.

It is not the purpose of this article to say definitely that cows with drooping rumps are always better producers than cows with level rumps, but to show that this point of conformation has in many cases been perfected to the breeders' satisfaction at a sacrifice to production, and that the prejudice against cows with rumps that do not carry out level is not warranted when their production is considered.

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THE EXPERT MILKER DOES HIS WORK WITHOUT FRICTION

The art of milking is to do the job comfortably, to keep the cows in good condition, and to get the highest possible yield.

The expert milker is a born animal trainer. He is even-tempered and not easily provoked. He gets along with his beasts without friction by gentling them. Lactation is a nervous function, and any disturbance of a cow's placidity results in a shortage of yield. Peace in the herd is a paying investment. It is not a matter of sentiment but of hard dollars and cents. To be profitable the cow must be contented.

The expert milker is also made by training and study. There are "tricks of the trade" which some gain by experience and all may learn by example. Regularity is important. The cow is a creature of habit. If feeding is delayed she frets and takes it out of her owner by giving less milk. She will do better if she is milked at the same hour every day.

All things considered, it is best to feed after milking. The cows stand more quietly, usually chewing the cud, and there is less dust in the air to contaminate the milk. Scientists declare that most of the milk is elaborated during the milking process and that a good supply of blood should flow to the udder at this time. The excitement of being fed draws the blood away from the udder and may prevent the highest flow.

comfortable milking ts oolamekIf,

A comfortable milking stool makes the job less arduous. Have the milking stalls clean. The use of a closed pail having the top fitted with a wire strainer which is packed with steril ized absorbent cotton helps in the pro duction of good flavored sanitary milk.

The farmer who desires a clean product that will keep well will wash the teats, udders and flanks of his cows before milking. Dirt is not only disgusting but dangerous—and expensive. It carries bacteria that cause milk to spoil quickly and sometimes contains disease germs as well. The hands should be kept clean, the nails trimmed closely, and the abominable practice of wetting the hands with milk should be condemned by all decent dairy men.

While it makes little difference which teats are milked first, it is more convenient to milk one front teat and opposite hind teat at the same time. The process should be continuous and rapid without feverish haste. Long, steady pulls get the milk faster and with less annoyance to the animal.

If the teats are short, or the hands tire easily, the "Swisss tyle" of milking is recommended. It consists in flexing the thumb against the palm with the nail side against the teat, pressing the four fingers against the opposite side and squeezing down from the top. It may take a little practice to learn this trick, but it is worth all the patience and effort necessary, as one can milk faster and with less fatigue. The writer employs this method with all cows except those having very large teats.

It is important to empty the udder at every milking. Nothing will dry up a cow more surely than to leave a little milk each time. Nature takes it as a sign to let up the supply, saying in effect: "The calf is eating grass and will soon be weaned." You must fool nature into thinking the calf is still there with a husky appetite, taking all the milk the dam can manufacture. The most profitable cows are those which do not dry up quickly but give milk all the year round.

Stripping with the thumb and forefinger is only one way to get the last of the milk, which is the richest in butter fat. The Danes, who are leaders in good dairy practice, have a way of kneading the udder with both hands, gently pressing down from above first at the sides and then front and back. After kneading for half a minute follow with a final stripping. The calf butts to get the last drop, and this manipulation is only another imitation of nature.

Vaseline or some good ointment should be used frequently to keep the teats soft and to heal up scratches.

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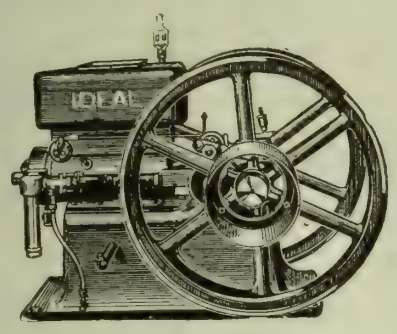

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Hon. W. Owens, 4026 Dorchester St., Montreal.
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Must reduce stock to make room for young stock.

ORCHARD HILL FARM
Brown's Flats, N. B.

THE DRAFT OF PLOWS

(Continued from page 724)

onstration is worth a hundred articles on the subject. What effect do dull shares and coulters have on the draft? How much does the lead team pull when plowing tandem? Do the different makes vary to any extent? Questions like these should be answered at the local plowing match. I feel sure implement men would co-operate, and the writer's experience has been that such a demonstration is highly profitable and instructive to all. Readers wishing to go further into this question ca nget valuable information from "Power and the Plow," Ellis-Humely, and in King's "Physics of Agriculture." —Grain Growers' Guide.

SHIP POTATOES IN SACKS

In a recent address President C. H. Gardner, of the Maine Farmers' Union, plainly told farmers there are two things they should do if better pric s for their produce—notably potatoes—are secured. In the first place, there must be a better system of grading, local unions shipping only those goods which they can stand behind. In the second place, Mr. Gardner believes potatoes should be shipped in sacks instead of loose or in bulk in cars. When shipped in bulk there is always a comeback through shortages; misunderstandings and dissatisfaction between dealers and growers are pretty apt to result. While it takes some time to sack potatoes, the operation must be performed somewhere between the grower and the consumer. Mr. Gardner says truly that the country end is the proper place to do it. It will facilitate handling, especially if potatoes are brought under the auction system, not to mention the elimination of the long train of complications that shipping in bulk brings. Potato growers should carefully consider these points of President Gardner, for he knows what he is talking about.—New England Homestead.

STRAWBERRY PLANTS

For the Spring of 1917 we are listing the following varieties:

Senator Dunlap, Sample, Warfield, Wm. Belt, Arnout, Valeria, Desdemona, Ophelia, Portia, Glen Mary, Buster, Haverland, Kellogg's Prize, Paul Jones, Progressive, Superb.

Our new Catalogue and Price List will be ready about the first of the year, and will be sent free to all our old friends and any new ones that are interested in berry growing. The new fall bearer, Progressive, is a great addition to the strawberry world. Be sure and include them in your order for 1917.

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And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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DATES TO REMEMBER

INVERNESS COUNTY EXHIBITION
Inverness, N. S.
September 5 and 6, 1916

CHARLOTTE COUNTY EXHIBITION
St. Stephen, N. B.
September 12, 13, 14, and 15, 1916

HALIFAX EXHIBITION
Halifax, N. S.
September 13 to 21, 1916

CHARLOTTETOWN EXHIBITION
Charlottetown, P. E. I.
September 26-29, 1916

YARMOUTH COUNTY EXHIBITION
Yarmouth, N. S.
October 4, 5, and 6, 1916

SYDNEY EXHIBITION
Sydney, N. S.
October 3-6, 1916

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A fine Jersey Bull, well grown, of excellent breeding, will be sold very reasonable. 15 months old.

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REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, SEPTEMBER 12, 1916. Number 23.

Establishing and Maintaining a Farm Flock of Sheep

Roscoe M. Wood in Breeders' Gazette.

It requires a firm faith founded on practical experience and knowledge of handling sheep for a farmer to establish successfully a pure-bred flock in his community. He must believe in the wealth-producing power of the golden hoof, and he must fully realize the necessity of supplying such a flock the best care and the proper feed. If he prove a successful breeder, in addition to these will develop a knowledge of breeding and of how to mate animals to produce desired results. The growth and development of a live stock breeder is not the work of a day nor a year—a lifetime is all too short.

No farmer should attempt handling pure-bred sheep, nor any other class of live stock, except sires used, before he has thoroughly acquainted himself with the requisites for producing thrifty, growthy, profitable animals. Such experience is most economically obtained with animals produced for the general market. He must learn that while sheep will eat weeds and clean up fence corners, woodlots, and stubblefields, they also require clover hay, grain, and roots at certain seasons. Like everything else in this world, the flock must be given care if it is to provide for its keeper. The better care and feed it receives the greater will be the profit.

In starting the flock the question of breed must be determined. While the individual preference should be followed, yet choice should be made in accordance with the condtions of soil, climate, and market. The experience gained from handling the market flock will have been instructive in teaching the characteristics required to produce the most profit, so that the breed which best combines these essentials should be chosen, other factors being equal. Another condition which should be observed is the popularity of the chosen breed among the neighboring farmers. as to them must one look for a market for his surplus stock. If there is no pronounced predilection it is more a question of the breed best adapted to the climatic and feed conditions. Whether it is a wool or mutton breed or one combining both depends on other conditions.

The breed determined, the foundation should be secured from a reputable, experienced breeder. An average animal from a flock produced by a real breeder, a shepherd who has established a fixed type in his flock, is more valuable than a superior individual that has just happened in some flock of unknown quantity. In the selections the judgment of the breeder may be relied upon to a great extent, especially in the matter of breed quality, a term difficult of accurate definition, but very essential, and a knowledge of which is only acquired by experience. The buyer, however, should have definite ideas as to what he wants in the ewes he gets and should insist upon having those possessing the desired characteristics as nearly as possible without sacrificing too much quality.

Some characteristic which his experience with his market flock has impressed him as being important in producing a better sheep should be sought, but with it should be remembered the necessity of maintaining a well-balanced individual. A ewe excelling in some one particular but lacking in others should not be preferred to an even, well-made one that shows good breeding. The flock when selected should have a uniform appearance. This is absolutely essential if best results are to be secured. An even, uniform lot, even though they may lack in some particular, is superior to a lot which has one or two extra good ones and the others of only mediocre quality. Uniformity should ever be sought, as it is the even lot in which all look alike that always appeals to the eye and to the pocketbook.

There are many points in a sheep which must be noted, more than in most classes of live stock, as both products, wool and mutton, demand consideration. First of all, however, constitution and bone are required. Neither wool nor mutton can be obtained from a weak, narrow-chested, spindle-legged animal. Lung power, denoted by a wide chest, flat shoulder, and large heart girt, accompanied by a broad back and round ribs, indicating digestive capacity, assure the owner of an animal capable of profitably transforming grass and grain into wool and mutton. Bone is likewise essential. In a sheep it is best indicated by the foreleg. Good bone does not mean length of leg; rather should it be straight and of circumference proportionate to length. Legginess should be avoided, as well as dumpiness. Neither is profitable, and both are obstacles to improvement.

The selection of the ram is more important than that of the ewes. He is half the flock. As a matter of fact, he is the whole flock. It has been the great sires that have made breeders famous. The buyer should have a fairly definite idea of the type of ram he needs, and when he finds what he thinks he wants he should not hesitate to pay the price.

In these selections one must not forget that a pedigree is valuable, not because it is a piece of paper bearing an association seal, but because it is a record of ancestors whose superior characteristics and individuality were considered of enough importance to warrant their breeders and owners in expending money and effort in maintaining that record. It is an insurance of pure breeding and an assurance of good breeding and prepotency.

The pedigree, however, must be accompanied by individual merit. Thrifty, well-grown animals demonstrate their own excellencies. True there are cases where the quality of the animal shows in spite of mistreatment, but it is better to buy those which show for themselves than to depend upon the statement of the breeder as to the matured form which may be developed. Show animals are not required; rather they should be avoided by the amateur; but good condition is essential to success in the lambing pens later.

Blood will tell, but it takes feed to make it. Many a well-bred animal has failed of full development because his owner depended too much upon the pedigree and not enough upon the grain trough. All the breeding in the world will not produce a good animal without ample and proper feeding, any more than all the feeding and shepherding possible cannot make a prize winner out of a scrub. We sometimes hear of pedigreed scrubs, but most of them have been made by the careless or parsimonious feeder who thought to make the paper develop the animal.

It behooves the shepherd to keep his flock in thriving condition at all times Constant, careful, sensible feeding ever insures a thrifty, profitable flock. Thus fed, they are enabled to make the most growth and the greatest possible development, and demonstrate their superiority over the average flock. The owner is never ashamed to show a flock so maintained, while his neighbors are naturally favorably impressed when they see his sheep always in marketable condition. Then they begin to realize wherein the pure-bred flock is better and pays more than the common grade flock.

The breeder must realize that his flock is being watched by his neighbors, and his success will be measured by the results he obtains. He must produce good animals, not necessarily ribbon winners in the show ring, but those which will produce more and better wool and mutton at the cost which average specimens would require. He must make progress in his work, and to do this he must have the encouragement of financial reward. To secure this requires the production of breeding animals possessing qualities which will improve the common market flocks and make their progeny more profitable to the farmer who raises them

To impress upon his neighbors the real value of his flock it may be necessary to demonstrate to them the greater market value of sheep of his breeding by fattening a portion of the lamb crop and selling on the open market. This plan is often good business. The poorer individuals can be profitably turned into money quickly; at the same time such culling of the flock increases the value of those left, while the market for breeders is naturally limited and requires few to supply it until the flock has acquired some local reputation. When he shows heavier lambs produced on similar feed and in less time, or a longer, heavier fleece which commands a price higher than the average, he will have gone far toward making evident the fact that he is maintaining his flock for profit and getting the money. Such demonstration will create a demand for his rams as breeders, and as the demand increases the price and value will advance.

Progress in breeding will be made according to the judgment displayed in securing rams which produce improvement along the desired lines. To do this intelligently every shepherd must have an ideal sheep in his mind, to approach as nearly as possible the production of which shall be his ambition. Perfection is not attained in this world, and it is best that it is not, for then would ambition cease. In the development of animal form it sometimes seems as if the goal were nearly reached, and then we change our ideal and continue striving for its attainment. No great constructive work is breeding sheep, nor any live stock, has been accomplished without the possession of an ideal by the man who produced it. In his mind is a picture of what he considers the perfect sheep, and in selecting and mating his breeders he attempts to choose those with the most pronounced characteristics essential to his ideal, and to secure their reproduction and intensification in the next generation.

This ideal may be rather indefinite at first, but as the shepherd learns more of his flock and sees the results of successive matings, his mind's picture attains clearer form, and with a better knowledge of what to demand and what to reject in the practical evolution of his plans. To be of greatest value this ideal must take full cognizance of practical possibilities and limitations and the proper proportions of the various factors involved in its production. With the flock one must not over-emphasize some characteristic which is of little practical value at the expense of those which are absolutely necessary. For example, an excess of face covering should not be gained at the expense of a strong back or straight rump or some other factor which is of market value. Factors which produce more or cheaper meat or wool demand first consideration: after that may be added any features which improve the appearance of the animal. Every man is certain to be a crank on some particular feature, but the real breeder is the one who can subordinate this personal prefer-

(Continued on page 768)

Profitable Dairying on the North Shore of N. B.

Last year an article appeared in this magazine about the good work being done by R. L. Hicks, of Dalhousie Junction, N. B., along the dairy line, but more especially in the breeding of high-class Holsteins; and such has been his progress in the last year that he deserves more than passing mention.

Mr. Hicks tested two heifers last year, and they both made very creditable records. One was sold; the other has again been tested in February, and turned out to be the best junior three-year-old ever produced in the Maritime Provinces or Quebec, and holding at that time sixth place in her class in Canada.

This famous heifer is Homestead Lass, an animal of enormous capacity, very gentle, and possessing a business look that gives one the idea when you first see her that she is not vigorously chewing her cud for nothing. She gave in the seven days 538.0 pounds of milk, containing 25.06 pounds of butter. So Lassie not only gave an enormous amount of butter, but also milked on an average of 76.8 pounds, more milk than the average herd through the country produces in the same time.

After the test was over and her milking periods lengthened and her feed cut down, a retest was ordered, and Mr. A. E. Dickie, of Central Onslow, was sent up to make a retest. Well, Lessie's owner got word six hours before Mr. Dickie was due to arrive. Lassie evidently heard the telegram, for she got right to work, and chewed hard, as much as to say: "I'll show you fellows a wrinkle or two," and by the time the retest was started Lassie was up to 81 lbs. per day.

No more need be said about Lassie, but it's just once in a long time that you come across one of her temperament, and she is going to be heard from again in the near future.

At the same time that Lassie was tested a junior two-year-old was tested after milking five months, and gave 11.97 pounds of butter. At the end of the sixth month in her lactation period she had given over 8,000 pounds of butter, and if she keeps on at her present rate she will easily go over 14.000 pounds—quite a nice record for Millie Pontiac Pledge. Mr. Hicks says he has as much faith in Millie as any cow in the barn, and that's saying something for her.

There is a common expression, "And the worst is yet to come," but in this case it is reversed, and "The best is yet to come." Two more cows were lately started in the seven-day test. One was a five-year-old, Lady Woodway, Clothilde De Kol 2nd, an exceptionally large cow and a grand feeder, and she made 21.05 pounds of butter in the seven days, which is no mean record for any cow, especially this one, for as a two-year-old she met with a very serious accident which nearly led her to the butcher.

Those who read the article in The Maritime Farmer last year will remember that mention was made of a two-year-old heifer that was started in the test but had her teat tramped on and she was dropped out. Well, every one knows that this would be a great hindrance to the proper development of this heifer, and would certainly not do as well in later years as she would have had that accident not happened. However, about a month after the accident her teat was fairly well healed up, and she milked along till within six weeks of freshening. She is an exceptionally large heifer, with good quality, and will make quite a show cow. Mr. Hicks entered her in the Chatham Exhibition, but she had milked every ounce of flesh off her and was so thin that she was left home. So you see any flesh she carried at the beginning of her section lactation period was put on in about six weeks.

On April 4th she was started in the seven-day test, and started off at a twenty-five-pound clip, but gradually rose till at the end of two weeks she stood fourth in her place in Canada, making 26.54 pounds of butter and 496.7 pounds of milk in the seven days, and 51.93 pounds of butter in fourteen days, and 9767 pounds of milk. So this makes Abbekirk Queen Countess the champion junior three-year-old dairy queen of eastern Canada. She is the result of Mr. Hicks' own breeding.

Starting in a few years ago, he purchased her grandmother. Her daughter was bred to his own bull, Maple Grove Mercena Mercedes, a bull who has never yet sired a poor daughter, and has the honor of being the first Canadian-bred bull to sire a daughter with a record equal, or greater, than Countess. These records, Mr. Hicks claims, made under his conditions, are equal to thirty-pound records made under ideal conditions in the herds of Canada's foremost breeders. More than that, there are men who have been breeding Holsteins for thirty years and in all that time have not reached such a high standard as has Mr. Hicks in his few years.

As a result of Mr. Hicks' advertising in The Maritime Farmer his bull was sold to Mr. F. L. Titus, of Bloomfield, Kings County, N. B., who was on the alert for something extra special in the Holstein line. But the bull proved rather too large for Mr. Titus' herd, and Mr. Hicks being very anxious to get his bull back when he realized his value, traded with Mr. Titus for a fine young bull bred by Mr. Hicks himself and owned for some time by his brother, of Bathurst.

Mr. Titus also bought two calves, one a daughter of Maple Grove Mercena Mercedes, out of Mr. Hicks' famous old producer and money maker, Maple Grove Belle; the other heifer is out of Homestead Lass. No better breeding can be obtained, and, judging by the condition and further development of Maple Grove Mercena Mercedes when he was returned to Mr. Hicks, Mr. Titus will certainly develop these two yearling heifers and it is hoped that he, too, will carry on testing; and we may rest assured that if he does records will be made which will be hard to equal.

Homestead Lassie's second calf, a bull, sired by Maple Grove Mercena Mercedes, has gone to the Brimner farm at Chatham, N. B., where he is developing into a fine animal, and he is upholding in appearance the reputation he has behind him for production, namely, that he is the only calf in Canada whose mother has a junior three-year-old record of 25.01 pounds, and his half sister with a junior three-year-old record of 26.54 pounds. The same farm has also purchased a granddaughter of Maple Grove Patti, with a record of 32.59 pounds of butter, and a granddaughter on her father's side of Maple Grove Belle. So this farm also has great foundation stock, and plans are being made to purchase one or more Holstein heifers, and testing will be carried on.

Again turning to the Hicks herd, it is interesting to mention the high average test of the milk produced on this farm. How often have we heard people remark: "Oh, yes, but Holstein milk is a pretty poor looking article!" But wait a minute! When the tests were being conducted the supervisor, out of curiosity, took a sample of the milk when it was loaded on the sled, ready for market, and it tested four per cent. Poor milk is an unknown article on the Hicks farm.

Again we hope that the proprietor of Maple Grove Stock Farm will continue his grand work in putting before the people of the Maritime Provinces an example of what a man can do when he works honestly and diligently, not only in his own interests, but in the interests of others, and what can be done in the line of profitable dairying on the North Shore of New Brunswick.

The Milk Situation in Saint John

The intimation by the Kings County Milk Producers' Association that after September 1st they would increase the price of milk to the St. John dealers from 30c and 35c per 8-quart can—the summer and winter prices respectively—to a flat rate of 40 cents per can brought a hue and cry from the St. John milk dealers.

All of a sudden the dealers' heartstrings relaxed. They could not possibly think of raising the price of milk to the consumer, who is now paying 8 cents. They claimed that to raise the retail price to 9 cents per quart would be ruinous to the consumer and that many of the poorer classes would have to dispense milk from their diet.

In the tenderness of their hearts they could not, therefore, think of raising the price per quart to nine cents, and therefore it would be impossible for them to meet the demands of the milk producers.

On the other hand, the producers contend that at the present high cost of feed, labor, etc., it is impossible for them to make milk profitable at the present prices.

Meetings were held in Sussex, Norton, and St. John, but no definite settlement was concluded. Some of the dealers have, however, contracted with some farmers for 40 cents per can.

The demands of the Kings County milk producers are quite reasonable and in keeping with the prices asked and received by milk producers in other large centres. They resent the attitude of the dealers in dictating what price the producer should ask for his milk. The time is here, and it has not come any too soon, when the farmer must arise and dictate to the dealer what price he asks and must receive for the various farm commodities he has for sale. All other classes of manufacturers set a price on their goods, and the buying public must pay accordingly.

It will be interesting to our dairymen to read the prices that are being asked for milk in other places.

The Milk Committee of the West Sussex, England, Farmers' Union met recently to consider the price of milk for the ensuing year. The question was, said a member: what was a fair price to allow dairymen for retailing. The dairymen had their labor troubles as well as the farmers, and the point was whether they could do the retailing at 8d. or 9d. a gallon. It would be fatal to milk producers if, however, the retail price was pushed to more than 6d. a quart. At 8d. the dairyman was allowed 33 1-3 per cent. It was decided to recommend the delegates to the conference at Brighton convened for dealing with the matter to advocate 1s. 4d. a gallon for the seven winter months, and 1s. 2d. for the five summer months.

At a meeting of delegates from the Dairy Farmers' Associations in the area south of the Thames, England, held at Brighton recently, it was recommended that the price of milk for the ensuing winter months be 1s. 6d. per imperial gallon, the feeling prevalent being that only by offering a sufficient inducement to the farmer to meet the enhanced expenses of production was there any possibility of maintaining the supply in any way equal to the requirement of the nation.

Ottawa district milk producers are asking an advance to twenty-two cents per gallon for their product, to take effect from September 1, which would mean an advance to the consumer from eight to nine cents per quart. The reason given is the increased cost of producing milk, due to the scarcity and price of labor and the cost of dairy cattle feeds. Though the hay crop was large, many find it more profitable to sell than to feed it. The local grain crop was very far below a fair average, and the corn crop was very late and at best uncertain. Bran, gluten, oil cake, and other necessary feeds had gone up about twenty per cent., and cows another twenty per cent. In all this increased cost of production would average about twenty-five per cent. Furthermore, the milk supply had fallen, and the price was in a large measure governed by the prices of butter and cheese, which were soaring because of the foreign demand. The officer of the forage department at the Central Experimental Farm stated at the producers' meeting that milk at current prices was being produced at a loss.

The retail prices of milk in some of the important centres in Canada in July, 1916, were as follows:

	Quart
Sydney	10c
Halifax	9c
Charlottetown	7c
Moncton	8 to 9c
St. John	8c
Fredericton	8c
Newcastle	8c
Cobalt	10c
Sault St. Marie	9c
Port Arthur	10c
Fort Willin	10c
Winnipeg	10c
Brandon	8c
Saskatchewan towns	10c
Alberta towns	8.3 to 10c
British Columbia towns	10 to 12.5
Quebec	10c
Sherbrooke	8c
Montreal	9c
Ottawa	8c
Kingston	8c
Orillia	8c
Toronto	9—10c
Windsor	10c

THE LABOR PROBLEM IN FRANCE

Prof. M. Cumming sent us the following interesting excerpt from a letter from one of the students of the N. S. A. C. who is now "somewhere in France":

"The labor problem which is confronting the farmers of Canada today is, I will admit serious; but I think that it would be small in comparison with that of France if it were not for the women. I have watched an old woman who I would judge to be near sixty years old drag a wooden spike-tooth harrow across and back an acre field until she had the ground as mellow as one would wish; then sow her grain by hand from her apron; then go over the field again with the harrow. On the larger farms, of course, they have horses, but I have never seen a seeder and only one mowing machine and two binders since coming to this country. The harvesting is done almost entirely by hand, and the crops are surprisingly heavy considering the crude way the ground is worked."

USE OF LIME IMPROVES PHYSICAL CONDITION OF SOILS

During recent years the practice of using lime upon our fields as a factor in the production of large crops has come to the front. Many farmers who have been growing large yields of certain kinds of farm produce found that the quantities were for some reason growing less and less. They were at a loss to account for this. The seed germinated freely, but did not produce the same vigorous growth of former years. In many parts of the country where this condition existed the land was said to be clover sick, and as this and the legumes were the most affected it was advised that this crop should be dropped from the rotation for a while until conditions became more favorable again; but while this practice seemed to be somewhat beneficial it did not overcome the difficulty. A thorough investigation of the causes by scientists at the experimental stations and other places revealed the fact that in most cases where this condition prevailed the soil had become sour and needed some alkaline substance to neutralize the acid and turn it into a neutral salt For this purpose a great amount of interest has been developed in placing upon the market in convenient form some one or more of the lime products to accomplish this result. Especially has this matter been brought more prominently before the public during the last two or three years, as plants for this purpose have been set up here and there throughout the country.

Soils become acid by the fermentation and decay of barnyard manure and the various vegetable matters added to it from time to time. If there is sufficient lime present in the soil when the decomposition and fermentation takes place the acid will be neutralized by it and no application will be necessary. In the early days of agriculture much of the land had plenty of lime for the best results, but as the years have advanced the gradual removal of this for overcoming the soil acidity has caused much of the land to be deficient, particularly where large crops have been grown and much manure used, causing greater fermentation and production of acid. Many soils also are deficient in the beginning, and hence have need of a supply of lime when first brought under the plow for crop production.

In addition to the benefit to be derived from lime as a neutralizer of acid conditions, it has a direct effect upon the physical properties of a soil, rendering it more friable and easily cultivated. Heavy, sticky clay lands are so loosened up that crop production is successful where it was previously of little service. Sandy land is also improved by rendering the particles more adhesive and firm and thus being less open does not dry out as readily.

Another beneficial effect of lime is its liberation of mineral plant food. Phosphoric acid is largely held in the soil in combination, and not readily available by plants. The action of lime improves this condition. Most of our soils contain large quantities of potash also in insoluble form, but by the action of lime it is rendered available for plant food. This is a very important fact at the present time on account of the scarcity of this article and the high price it commands. Another great benefit to soils from the presence of lime is the bacterial benefit. There are many forms of bacterial agencies in soil that are necessary to the successful growth and development of crops. Of these the most important from an agricultural point of view is the nitrogen gathering bacteria associated with the legumes.

The method usually employed for determining if a soil is in an acid condition is the blue litmus paper test. hTis article may be obtained from any drug store, and if it comes in contact with acid for a short time it will turn red. To test a soil for acidity, procure several small portions of earth from different parts of the area to be tested, a few inches below the surface, and mix them together. Then dampen them sufficiently to pack a portion into a ball-like form, break open, and lay the paper between the parts, and press together again. Let it remain there for 10 or 15 minutes, when, if there is any acid present, it will have turned red. Care must be taken that hands are clean and that no acid has been present in any form from other sources than the soil under test.

There are several forms of lime that may be used for agricultural purposes.

Quicklime is obtained from burning limestone or corbonate of lime when it is decomposed, and carbonic acid is given out in the shape of gas, while quicklime remains behind. This form of lime must be slacked before it can be evenly distributed over a field. Fifty pounds to four square rods will give an application of one ton per acre. If water amounting to one-third of the weight be added and the heap covered with an inch of soil the lime will soon slake, when it may be spread with a shovel. Hydrated lime is simply the quicklime slaked with water and while in convenient form it will be too expensive for agriculcural purposes.

Air-slaked lime is quicklime that has been exposed to the air for a sufficient length of time to become slaked without the addition of water other than what it absorbs from the atmosphere. It differs from the freshly slaked lime in that it has taken up some carbon dioxide from the air and part of the lime has passed back into the carbonate condition. Ground limestone is simply the limestone rock similar to that which is burned in the preparation of quicklime, finely pulverized. The finer it is ground the quicker its action will be felt in the soil. It need not be ground very fine as the coarser parts will become gradually worked down and thus an evener distribution made over the succeeding years without waste than if all the particles were very finely ground. If the coarser parts correspond to wheat grains and the balance down to very fine particles it will be a good form. Land thus treated will need an application only every four or five years.

In the application of lime, equivalent weights is an essential that needs careful consideration. Fifty-six pounds of quicklime will have the same action in correcting acidity as 74 pounds of slaked lime and 100 pounds of carbonate of lime or ground limestone. In general practice two tons of ground limestone is considered as equal to one ton of quicklime. Which form of the lime is best to apply will depend upon the soil for which it is intended. If the soil be a stiff clay in need of improving physically the quicklime will be best on account of its quicker action and the little chance of too rapid decay of organic matter. Where rapid action is not an important part, as in case of sandy soils, the ground limestone will be best. In muck and peaty soils that are very acid the quicklime will be best.

The amount of lime to be applied will vary with the quality of the soil and the amount of acid present. Usually one ton of fresh quicklime or two tons of ground limestone will be sufficient per acre. Agricultural lime is best applied on the surface and worked into the upper soil by cultivation.

The application of lime is somewhat difficult unless a machine is used, as spreading with a shovel from a wagon box cannot be regulater to any degree of exactness, nor be put on very evenly. There are, however, low-priced lime sowers on the market which are satisfactory; even a manure spreader can be used to advantage. Fertilizer drills may also be used, but going twice over the ground will be necessary, as enough cannot be got on in one operation.

Massey-Harris
Low-Down Spreader

A Low-Down Spreader
A Wide-Spread Spreader
A Steel-Frame Spreader
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DOMINION WAR LOAN

TO BE ISSUED IN SEPTEMBER.

By purchasing a bond you will help to WIN THE WAR and obtain for yourself an investment of the highest class yielding a most attractive rate of interest.

DEPARTMENT OF FINANCE
OTTAWA.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. When paid in advance 80 cts. Persons taking advantage of the 80 cent rate are only entitled to it by paying in advance each year. When subscription gets in arrears, $1.00 per year will be charged. Subscribers are requested to bear this in mind. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written complaint must be made to the publisher within one week from the date of any unsatisfactory transaction, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said:—"I saw" your adv. in the MARITIME FARMER.

RATES FOR CASUAL ADVERTISEMENTS.

inch—First insertion 75 cents 2 inches—First insertion $1.50; inches—First insertion $2.25.

Contract rates on application.

Address letters and make all checks, money orders, postal notes, etc., payable to

THE MARITIME FARMER, or
R. D. Robinson Publishing Co., Limited
Sussex, N. B.

Toronto Representative—J. Lester Davis, Miln Building 8 Johnson Street.

Montreal Representative—Dakers Cameron, St. Nicholas Building.

NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

RECEIPTS FOR FARMER SUBSCRIPTIONS

The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

SEPTEMBER 12, 1916

DATES OF ISSUE.

September	12—26
October	10—24
November	7—21
December	5—19

SUPPORT THE EGG CIRCLES

Every one familiar with agricultural conditions knows of the mighty work which has been, and will continue to be, accomplished for Prince Edward Island by the Egg Circle movement. For three years past this has been dealt with as a co-operative work, and 1916 will see rather over $350,000 paid out to the farmers' wives and children of that small province through the circle, while at the same time "Island eggs" have taken their rightful place as a standard commodity, not a football amongst the Montreal speculators, to be bought only at half price and sneered at because of small size and poor quality. Great credit is due the men who started and pushed this work to its present point. No one doubts the future. The result to date guarantees that.

The strange thing is that New Brunswick and Nova Scotia have not taken this up more quickly and without urging. Nothing gets quicker returns than poultry. Nothing pays anywhere near as well on the first investment. These provinces by reason of their uniformly cool summers can produce eggs over a longer period than any other part of Canada. And in addition to the home and western Canadian demand we have the American market and the export. There need be no talk of over-production. When other sections over-produce we will still be nearest to the large outlets, and that day is, in any case, too far off to be considered at this stage.

We have said that great credit is due the agents of this movement on the Island. Not the least of this belongs to the clergy of all denominations. We hold no brief for or against the country merchant. But if that party in any district does not get into the egg business in the right way the egg business does not, and should not, belong properly to him. The producer is the man entitled to the return for producing a good article, and same should not, and in the egg trade must not, be taken away by improper methods.

It is highly gratifying to know, having got the Island organization along to a much more than self-sustaining point, the federal department is now preparing, with the active co-operation of the Provincial Department, to develop the circle movement in New Brunswick. We trust that all interested will join with them and with **The Maritime Farmer** in speeding it up. Nothing can be simpler. The farmers of a given district get more hens and deliver their eggs once at least each week, receiving then the cash for the delivery of the previous week, by standard, according to quality, which means freshness, strength, and size. Each egg has been examined by trained hands, who neither know nor care who delivered it, and all are candled and put into cases as they ought to grade. The buyer knows what he is getting. He can pay more for it. The farmer knows within one week if his methods are right. The occasional meetings to discuss details will give opportunity for further exchange of ideas as to feeding methods, breeding in better laying stock, and a hundred other things, the net result of all which is to make the undertaking pay better each season. New Brunswick ought in the same time as the Island has done to be producing more eggs than the Island does. Consider for one moment what $350,000 more revenue per year will mean to the farmers of this province. Why, we laugh at war taxes!

And this is not day-dreaming. **It has been done.** That is the answer. And, more even than that, it has been done by a people with less than a third of our population, with uncertain winter shipping service, and with a reputation in the production of inferior eggs to live down, which in itself would have discouraged any except enthusiasts led by men who realized the natural advantages they had to offset it with.

Our surplus can at all times be stored at St. John under exactly same conditions as are elsewhere available and at the same rates. It is, in fact, intended that the candling station for New Brunswick, which, by the way, will also serve the western end of Nova Scotia, will be established at the St. John storage, and our further understanding is that the storage people are undertaking to store only candled eggs and provide free space for the station for three years.

This will put it right up to the producers. The buyers are ready. The idea, as we have said, is not new. But, let us repeat, it is highly adaptable. And—IT PAYS. We bespeak for the movement a keen interest and a prompt and favorable reception.

NEXT YEAR'S SEED GRAIN SUPPLY

We trust a great many of our farmers have taken the precaution to go through their grain fields before they were harvested and picked off a sufficient quantity of the heads from the most productive plans to start a seed plot next year. We know no other work that brings in such a handsome remuneration as does the work of seed selection.

The soil may be well cultivated, well drained, and well fertilized, all of which processes mean expense in time and money; and the season may be favorable for good growth; but if the seed used is not of the best quality the maximum returns for time, labor, and investment will not be realized.

The best time to select next year's seed supply is when the grain is ripe and uncut in the field. If this has been neglected, do not neglect to do the selectiing at threshing time. Use your fanning mill to the best advantage and separate as many of the plump, heavy grains as you can for next year's seed. The lighter portions are not good seed and will do first rate for feeding. To put off the selection of seed until the major portion of your grain has been fed to the stock or sold is a ruinous policy for the grain grower.

If you were working for some firm for $2.50 per day and you saw an opportunity to get $3.00 per day for your services from the same firm, you would not hesitate to equip yourself and work for the increase. The method you follow with your seed, be it careful or be it negligent, will determine to a large extent the wage you earn and the profit you make in the pursuit of your farming operations.

EXHIBITIONS

The season of the Fall Fair is now with us. It is a time of great interest to all, and particularly to our live-stock readers. Much of the best stock of each district is collected for competition and the placing of the awards to many is the greatest event of the year.

Look at the machinery exhibit and see what improvements are there! In this way you are gaining first-hand valuable information, combined with a pleasant outing. That is what the fair is for. It is a time of meeting friends, of seeing sights, and of being educated, and it is our desire that each of our readers will get the best possible from this annual outing. Go with the intention of having a good time, because recretation is essentially needful, and particularly to those who are somewhat isolated from their neighbors.

Get all the new ideas you can that are likely to be of benefit to you. Be on the outlook for them and don't be backward in asking questions from the fair board management or others who are likely to be able to give you the information you want.

The ladies will naturally spend much of their time in the hall, seeing the various kinds of fancy work, preserving, cooking, etc. It is all important, and do not overlook the clean attractions, as that feature of it helps to make the outing enjoyable.

Our advice is to go to your local fair, help boost it and get all the good you can.

ADVERTISE IN MARITIME FARMER

The Maritime Farmer, the only recognized exclusive farm paper published in the Maritime Provinces, goes regularly twice a month to the homes of the most progressive farmers in Nova Scotia, Prince Edward Island, New Brunswick, and Newfoundland The various members of these homes are deeply interested in one or more of the farm industries discussed in its columns every issue.

Has it ever occurred to you that when you wish to purchase some line of seed or live stock that just what you want to buy could be furnished very readily by one of the readers of **The Maritime Farmer?** Why, then, not insert a small ad in our columns, stating what you wish to buy? Replies will come thick and fast, and you will have no difficulty in securing knowledge of where the commodities you require can be procured.

If, on the other hand, you have stock or seed for sale, there is no quicker way whereby you can get purchasers than by letting the readers of **The Maritime Farmer** know what you have for sale. Many of them are just waiting to find out where such commodities may be procured. Try an ad in the columns of **The Maritime Farmer.** The cost is nominal, and the results will amaze you.

WAR LOAN

DOMINION OF CANADA

Issue of $100,000,000 5% Bonds Maturing 1st October, 1931.

PAYABLE AT PAR AT

OTTAWA, HALIFAX, ST. JOHN, CHARLOTTETOWN, MONTREAL, TORONTO, WINNIPEG, REGINA, CALGARY, VICTORIA.

INTEREST PAYABLE HALF-YEARLY, 1st APRIL, 1st OCTOBER.

PRINCIPAL AND INTEREST PAYABLE IN GOLD.

ISSUE PRICE 97½

A FULL HALF-YEAR'S INTEREST WILL BE PAID ON 1st APRIL, 1917.

THE PROCEEDS OF THE LOAN WILL BE USED FOR WAR PURPOSES ONLY.

THE MINISTER OF FINANCE offers herewith, on behalf of the Government, the above named Bonds for subscription at 97½, payable as follows:—

10 per cent on application;
30 " " 16th October, 1916;
30 " " 15th November, 1916;
27½ " " 15th December, 1916.

The total allotment of bonds of this issue will be limited to one hundred million dollars exclusive of the amount (if any) paid for by the surrender of bonds as the equivalent of cash under the terms of the War Loan prospectus of 22nd November, 1915.

The instalments may be paid in full on the 16th day of October, 1916, or on any instalment due date thereafter, under discount at the rate of four per cent per annum. All payments are to be made to a chartered bank for the credit of the Minister of Finance. Failure to pay any instalment when due will render previous payments liable to forfeiture and the allotment to cancellation.

Subscriptions, accompanied by a deposit of ten per cent of the amount subscribed, must be forwarded through the medium of a chartered bank. Any branch in Canada of any chartered bank will receive subscriptions and issue provisional receipts.

This loan is authorized under Act of the Parliament of Canada, and both principal and interest will be a charge upon the Consolidated Revenue Fund.

Forms of application may be obtained from any branch in Canada of any chartered bank and at the office of any Assistant Receiver General in Canada.

Subscriptions must be for even hundreds of dollars.

In case of partial allotments the surplus deposit will be applied towards payment of the amount due on the October instalment.

Scrip certificates, non-negotiable or payable to bearer in accordance with the choice of the applicant for registered or bearer bonds, will be issued, after allotment, in exchange for the provisional receipts.

When the scrip certificates have been paid in full and payment endorsed thereon by the bank receiving the money, they may be exchanged for bonds, when prepared, with coupons attached, payable to bearer or registered as to principal, or for fully registered bonds, when prepared without coupons, in accordance with the application.

Delivery of scrip certificates and of bonds will be made through the chartered banks.

The issue will be exempt from taxes—including any income tax—imposed in pursuance of legislation enacted by the Parliament of Canada.

The bonds with coupons will be issued in denominations of $100, $500, $1,000. Fully registered bonds without coupons will be issued in denominations of $1,000, $5,000 or any authorized multiple of $5,000.

The bonds will be paid at maturity at par at the office of the Minister of Finance and Receiver General at Ottawa, or at the office of the Assistant Receiver General at Halifax, St. John, Charlottetown, Montreal, Toronto, Winnipeg, Regina, Calgary, or Victoria.

The interest on the fully registered bonds will be paid by cheque, which will be remitted by post. Interest on bonds with coupons will be paid on surrender of coupons. Both cheques and coupons will be payable free of exchange at any branch in Canada of any chartered bank.

Subject to the payment of twenty-five cents for each new bond issued, holders of fully registered bonds without coupons will have the right to convert into bonds of the denomination of $1,000 with coupons, and holders of bonds with coupons will have the right to convert into fully registered bonds of authorized denominations without coupons at any time on application to the Minister of Finance.

The books of the loan will be kept at the Department of Finance, Ottawa.

Application will be made in due course for the listing of the issue on the Montreal and Toronto Stock Exchanges.

Recognized bond and stock brokers will be allowed a commission of one-quarter of one per cent on allotments made in respect of applications bearing their stamp, provided, however, that no commission will be allowed in respect of the amount of any allotment paid for by the surrender of bonds issued under the War Loan prospectus of 22nd November, 1915. No commission will be allowed in respect of applications on forms which have not been printed by the King's Printer.

Subscription Lists will close on or before 23rd September, 1916.

DEPARTMENT OF FINANCE, OTTAWA, September 12th, 1916.

HORTICULTURE.

A CAVE FOR VEGETABLES

A reader writes to ask if there are any points in favor of a cave for the storage of potatoes, and inquires as to how he shall proceed in making one that will be satisfactory.

Personally I prefer outdoor pits for storing fruit and vegetables, as I have little trouble in keeping them till the following spring, and it is certain that no other method yet discovered will so assist in retaining the natural flavor of whatever product is being stored. However, there is considerable risk attached to pit storage, since a late fall rain may catch one with the pit not entirely waterproof, in which case the moisture reaching the stored products will cause mischief later on. Also, in case a warm spell of weather comes on unusually late, it may get the products too warm in the pit, causing deterioration.

With cave or cellar storage the products will keep well. They will be handy for family use or for taking out to market. The labor attached to storing will be less than with outdoor storage in pits. And if deterioration of any kind should set in among the stored products those in cave or cellar will be where the damage will be noticed and remedied, while those in pits might ruin before one happened to open the pits and ascertain the trouble.

The cave must be built along correct lines if it is to accomplish the object of storage—that of keeping the stored products dry and cool.

Not only must the floor be dry, but the walls should be absolutely moisture proof. An efficient drain should lead away from the floor of the cave to guard against the possibility of dampness creeping in somewhere. A ventilating shaft should occupy the center of the cave. This allows the escape of odors arising from the stored products and is an important factor in guarding against deterioration that might set in if these odors were confined in the cave with the products.

Keep the fruit and vegetable cave clean, dry and cool till time to put the products in storage and put them away on a day that is as cold as possible without freezing them. Arrange barrels, bins, and boxes with a little fine dirt in the bottom, covering and lining the sides with straw or hay or leaves. These help in confining the natural flavor of the products. Keep the temperature low and as uniform as possible, avoid the withering effect of alternate warm and cold air on the stored products.

In this section there are four popular kinds of material used in cave construction. Lumber, either one or two-inch material, is nailed to posts set in the ground, the lumber being on the outside of the posts, so it will not crush inward. Ordinary building brick also is employed by some, but a brick cave is a little more apt to draw moisture than one built of any other material here mentioned.

Cement caves are becoming popular, because of the fact that one can build forms and run the cement in not only the walls, but the roof as well. About a fourinch thickness of cement is all that is required for walls and roof.

Another even more popular material for caves is clay tile, as it contains a dead-air space, hence is warmer and drier than the other materials. It also is light, easily built in, and practically indestructible after once in the walls.

It should be understood that all caves should have a foot or two of dirt covering after being built, to shut out cold and moisture. Also, there should be a door leading into the cave proper, and another rain-proof one at the head of the steps leading into the cave.—M. .C

HOW TO BLANCH CELERY

Celery must be thoroughly blanched before using. It then becomes crisp and tender. The blanching may be done in the garden or in storage. The summer and fall crop must be banched in the garden, while the winter supply may be cared for in storage. To secure the desired result in the open, stand boards along each side of the rows and secure them with stakes. The plants need to be hilled up a little. A better metho'l of blanching, so far as quality of crop is concerned, is to invert a drain tile over each plant when about twelve inches in height, filling the tile up with sand until only the tips of the leaves project. It is advisable to remove broken or injured leaves, especially those that show any tendency to decay, for they will affect others as the decomposition goes on.

Winter celery need not be blanched much before storing it. It may be left in the garden until the latter part of October, for a light frost will not hurt it; severe freezing will, however. Any cellar that is good for keeping root crops is all right for storing celery. Put some moist soil or sand on the floor in a dark corner of the cellar. The celery should be perfectly dry when taken up, for if stored while wet with rain or dew it is sure to rot. Take up the plants with some soil adhering to the roots. Trim off some of the older outer leaves and pack the roots rather closely together upon the bed of soil, and then pack some more moist soil over the roots, covering them well. They will make new white growth in a short time.

Celery that has been well blanched in the garden may be taken up and stored in the cellar for a few weeks by proceeding as follows: Trim the plants about the same as when they are prepared for table use, pack rather closely together in damp moss, and stand upright in a box. The top of the box must be left open for ventilation. In this way the celery may be kept in good condition for several weeks.—W. F. P.

Farm Between Two Cities

Equipped Only $2100

Only 2½ miles to one city; 42 acres, 100 choice apple trees, a lot of pears and peaches, some wood. Good 2-story 9-room house; clapboarded barn with cellar; 200 hen poultry house. Owner has other business and makes low price $2100, part down. If taken now, horse, cows, hens, buggy, wagon, cart, tools, machinery, crops and a lot of stove wood included. Great chance to work in city and live on farm. For travelling instructions see page 7, "Strout's Big Bunch of Bargains," copy free. E. A. STROUT FARM AGENCY," Dept. 2612, 294 Washi gton St., Boston, Tel. Main 3348.

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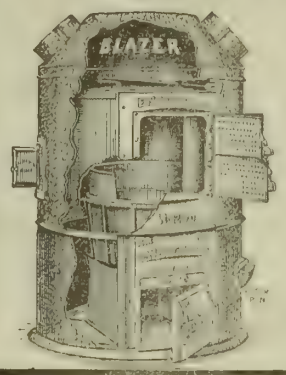
Warm Air
Blazer Furnace



Everything that a furnace ought to be—scientifically correct in principle, convenient and economical in operation, constructed to last a lifetime, reasonable in cost of installation and guaranteed.

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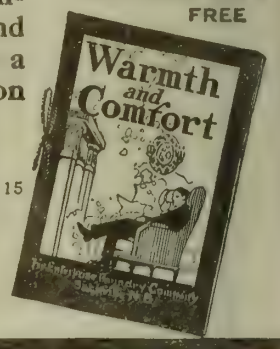

15

Enterprise
FOUNDRY CO. SACKVILLE, N.B.

Paint that House this Fall

Protect it from the destructive effect of a winter's snow and ice—save valuable time next spring for other work. Fall painting pays.

But be sure you choose the right paint—one that will *give* your buildings the years of protection that you've paid for.

B-H "ENGLISH" PAINT

is made according to the formula which scientific tests and many years of experience by practical painters prove to be best to meet Canadian weather conditions.

Formula: 70% Pure White Lead
30% White Zinc
100% Pure Paint

It contains 70% of Brandram's B.B. Genuine White Lead—of standard purity for over 100 years—and 30% of pure white zinc—thus combining, in the proper proportions, pure lead and pure zinc, and making a perfect paint. You take no chances with B-H "English" Paint. *Be sure you get it!* There are cheaper paints, but none more economical when covering capacity and length of wear are considered.

Sold by all leading hardware dealers. For Color Cards, Booklets, prices and the name of the nearest agent in your locality, please communicate with

BRANDRAM-HENDERSON LIMITED
MONTREAL · HALIFAX · ST. JOHN · TORONTO · WINNIPEG

BEES NOT INJURIOUS TO FRUIT

A committee appointed in Italy to study if bees are injurious to fruit has reported. The report states that bees, from their instincts, the conformation, function, and movements of their mandibles, as well as from the shape and consistency of the other mouth parts, cannot perforate the skin of fruit, and it is only incidentally that they lick and suck the juice exuding from fruits which have been injured by other natural causes.

The injuries to orchards and vineyards sometimes attributed to bees are due to poultry, wild birds, wind, and hail, and most frequently to hornets, wasps, vine moths, and other insects. The destruction of hornets and wasps is recommended; it is easily effected, because their nests can be found without difficulty.

Bees do not injure grapes or other fruit even indirectly; on the contrary, they are beneficial to them, either by bringing about the cross-pollination of the flowers, and hence the setting of the fruit, or by promoting the dessication of damaged fruits from which they absorb the juice and pulp thus preventing fermentation and rot extending to sound individuals (this is especially the case with grapes).

The orchards and vineyards frequented by bees give the most constant crops; the hive is a very useful and sometimes a necessary addition to the orchard.

In the interests of public economy, agriculturists are strongly advised no longer to entertain any suspicion as to the harmfulness of bees, and wherever possible to associate apiculture and agricultural enterprise.

It is hoped that in the event of any changes being made in existing agricultural legislation, the statement—already implicitly made—of the inoffensiveness of bees will be set forth in formal terms, and that the province will encourage the development of apiculture.

WHAT CO-OPERATION WILL DO

Co-operative marketing is the only method whereby the shipment of the produce of the farm can be so regulated as to not overcrowd certain markets and leave other markets bare.

It is the only method whereby our apples can be placed in right quantities on the markets to realize the highest prices.

It is the only method whereby new markets can be developed to the profit of the grower instead of the operator or speculator.

It is the only method whereby the grower can have his apples marketed at a fair cost.

It is the only method whereby the grower can get right to the actual wholesale dealer in Europe.

It is the only method whereby the grower can get into direct touch with the really big buyers, the buyers who will take whole cargoes.

It is the only method whereby large combines and organizations can be effectually dealt with.—A. E. Adams.

Ford
THE UNIVERSAL CAR

New Prices August 1, 1916

The following prices for Ford cars will be effective on and after August 1st, 1916

Chassis . . .	$450.00
Runabout . . .	475.00
Touring Car . .	495.00
Coupelet . . .	695.00
Town Car . .	780.00
Sedan . . .	890.00

f. o. b. Ford, Ontario

These prices are positively guaranteed against any reduction before August 1st, 1917, but there is no guarantee against an advance in price at any time.

Ford Motor Company of Canada
Limited
FORD, ONTARIO

Assembly and Service Branches at St. John, N. B.; Montreal, Que.; Toronto, Ont.; London, Ont.; Winnipeg, Man.; Saskatoon, Sask.; Calgary, Alta.; and Vancouver, B. C.

Fruit Packages

As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,
HANTSPORT, N S.

However advantageous the use of commercial fertilizers may be, farmers should still regard farmyard manure as the basis for maintaining the physical condition and fertility of the soils, and should endeavor by careful management to make on the farm and protect from waste a good supply of this most valuable substance.

The beneficial action of basic slag on heavy clay soil is well known, and the reason for this benefit is to be found in the effect which slag produces on white clover. In the absence of clover slag is of no value to pastures on heavy land.

Gray Iron Castings

of the proper quality, procurable promptly from

THE SMITH FOUNDRY CO., LTD.
King Street. 'Phone 55. Fredericton.

The Salt is mighty important

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 179

DAIRYING.

MAKING CHEESE FOR THE HOME

An easy method of making small cheese for home use is thus described by an Australian lady:

"Some years ago I learned to make cheese while visiting at the home of a friend, and it has proved a very useful part of my education by supplying our table with a good and wholesome article. Besides, when our friends and neighbors tasted it I became famous for the production of fine home-made cheese, and had demand for more than I could make. The hints herewith may be useful.

"For home cheese making on a small scale one usually has all the required implements at hand. First, a well cleaned wash boiler will answer for a vat. Take five quarts of milg for easc vat. Take five quarts of milk for each pound of cheese to be made—a 4 or 5 pound cheese is about right for family use. Use all morning's milk if possible; if some evening's milk is used be sure that it is sweet and skim, as a beginner is apt to lose that cream.

"Put into the boiler and heat to eighty-five degrees; remove from the stove and add the rennet. I use cheese rennet tablets, also cheese color tablets, which I buy at the dairy supply stores. The proper directions come with them, and if followed one cannot make a mistake about the amount of rennet to be used. But with the color tablets one must use judgment, as some milk has more natural color owing to different conditions, such as feed, seasons, and so forth, and some people like highly colored cheese while others prefer it very pale.

"Add the rennet and color tablets previously dissolved in a little warm water, to the warmed milk; be sure to use a dairy thermometer, for there must be no guesswork about cheese making. Stir thoroughly and cover with a cloth; let stand for forty to sixty minutes, or until it becomes of a good thickness, and if the curd is broken the whey will at once ooze out. If on testing it has not reached this stage let it stand a while longer. Now cut both ways with a long knife, clean to the bottom of the boiler, about an inch apart each way. Cover again and let remain for a short time. Soon the whey will rise, which may be dipped off with a bowl, having first spread a cheese cloth over the curd. Dip off all the whey possible. Then tape a sharp skimmer without a handle and stir and chop and turn the curd until it is quite fine. Do this as gently as possible, for the more gently it is handled all through the less cream will be liberated, and consequently the better will be the cheese. The whey should have a greenish cast and be nearly transparent. If it looks milky there has not been enough rennet or not enough heat; this cannot be remedied this time. One learns by experience about such things.

"Next place a clean, wet cheese cloth in a clothes basket; place the basket slanting in a tub, dip the curd on the cloth, and let the whey drain off. Meanwhile, heat several quarts of whey to ninety degrees and pour over the curd. This will harden the curd and make it squeaky; work gently with the hand until the whey it off. Now it is ready for the salt. Cheese requires less salt in proportion than butter. Work the salt through and taste to see if it is salty enough. Now place the cheese hoop, which may be a wooden bucket or pack measure with the bottom out, on a clean board. Spread a wet cheese cloth in the hoop, then dip in the curd; arrange the cloth over the top, then put on the cover, which should be a round board to fit in the hoop. A good home-made press is made by hanging a scantling to the wall in some convenient place two or three feet from the floor. The hoop is placed under this, with an upright block of wood on the round broad.

"The amount of pressure is regulated by hanging a bucket containing stones or other heavy substances on the end of a lever. The pressure should be increased gradually. The cheese should remain in the press until evening; then take out and turn on a clean wet cheese cloth, trim off all uneven edges, and put back into the press and leave until morning. Take out fo press, bandage it with cheese cloth, after which rub it thoroughly with melted butter, and cure it in a warm, airy room. Turn and rub with a very little fresh butter every day for a week; after that turn every second day and rub well without using any butter. It can be cut when four weeks old, but is better six or eight weeks. This differs according to taste, as some people prefer it more green than others."

A GOOD UDDER HIGHLY IMPORTANT

A good uddder is one of the most important items to consider in the selection of a profitable dairy cow. The size and shape of the udder will determine largely the quality of the cow, and whether or not she is capacitated to produce a large amount of milk. It should be rather square in shape, with plenty of depth, width, and length. The lower portion of the udder should be level and broad. It should reach far upward on the under side of the cow and should extend well up between the legs.

Size is by no means the most important feature in considering a good udder. Good quality is far more essential. A good quality udder can be judged by the skin being of fine texture, and very soft and pliable. The thick, coarse skin that feels hard to the touch should be avoided. Fleshiness and coarseness of the udder is an indication of inferior quality.

The good quality udder that possesses a fine, pliable skin will shrink considerably after the milk has been drawn. The skin will lie in soft folds that will fill out before the next milking time. With the fleshy udder there is not a great deal of difference befoer and after milking, but it seems to be full of milk all the time.

The good quality udder can best be deteced after milking. If one was only looking for size in udder he surely wouldn't pick on the one with the soft, pliable skin. But the man who is onto his job will avoid the fleshy udder and will understand why size is not all we

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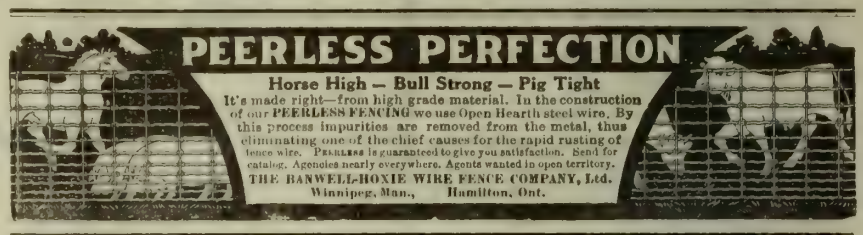
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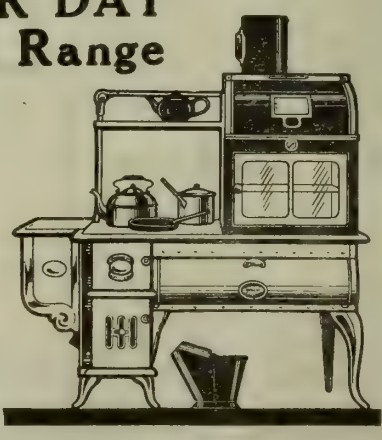

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THE CARE OF MILKING MACHINES

One of the facts brought out at the recent National Milk Show at San Francisco, where milk was judged after it had been produced seven or eight days and shipped from all parts of the country, was that it is a credit to the milking machines, as several of them produced milk that exhibited as low as a few hundred in bacterial count.

One of the most important needs of users of milking machines is that of quick cleaning. This can be done by running cold water through the machines immediately after they have milked the last cow, until such water looks clear, showing that the milk has been taken out of the tubes and cups of the machine. Then at least once a day it should be thoroughly washed with a washing powder that conains no animal fat, as animal fat is detrimental to rubber parts and tubes, such as all machines are now using.

The washing of a milking machine is similar to washing a cream separator. It should be done properly at the proper time. The same rule applies to all milking utensils. They should not be allowed to stand until the casein hardens.

The writer has seen a number of cases where through lack of washing the machines failed to produce proper results, either in speed or thorough-milking. The man who is in the dairy business must expect to dash his dairy utensils the same as he would feed his hogs if he were in the hog business. Not only is this essential for the successful operation of the machine, but leaving the milk stand on the rubber parts any length of time is very detrimental to the rubber, as the animal fat acts upon it in a way that is damaging to the rubber. I think that makers of cow milkers will testify that their greatest trouble comes from the lack of thorough cleansing of the tubes and cups. A vast amount of education on dairy sanitation has been given farmers in the past few years, and it is necessary that they take the lessons well to heart if they invest in milking machines.

When buying a heifer the first point to consider is that the animal is strong with a deep flank, indicating constitutional vigor, and the next is to see that her udder is right in form, and that her teats are large and set wide apart. If a cow is to be a good milker she must have somewhere to keep it, which does not, however, mean a thick, fleshy udder. As secondary and fancy points, a slim neck and long head with fine horns are good features. Above all things, avoid those heifers that show very small rudimentary teats, or those with large ones set close together. Such a heifer will never make a first-class cow. There are always risks to be run before securing a good cow without starting with those that can never improve. Even the best of pedigrees cannot make a good cow out of a heifer with a deformed udder.

expect in a well-developed udder.

The udder should develop uniformly. Each quarter of both portions should be the same size, and the fore and hind part should hang on the same level. It means poor milking qualities to see one quarter of the udder smaller than the rest. The development of the udder depends a great deal on how the heifer is milked. Care should be taken when milking the heifer so that all parts will receive the same attention.

The teats should be wide apart on the udder. Improper milking will often cause the front teats to be wider apart than the back ones. Short teats are very difficult to milk. However, we frequently find heifers with short teats that attain quite a growth as they get older. Teats should be rather pointed at the end instead of flat.—M. A. H., Glengarry Co.

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THERE are special advantages in using a good cream separator during the fall and winter months. The milk from cows long in lactation is hardest to cream, and likewise hardest to separate with an inferior separator.

Moreover, cream and butter prices are highest, so that the waste of gravity setting or a poor separator counts for most.

Then there's the sweet, warm skim-milk for stock feeding, alone worth the cost of a separator in cold weather.

There is surely no reason to delay the purchase of a separator or to continue the use of an inferior one.

You can't afford to wait until next spring. Let the De Laval start saving cream for you right now and it will earn its cost by spring. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
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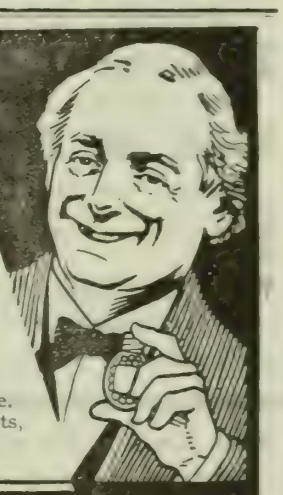
Constipation--

THE BANE OF OLD AGE

is not to be cured by harsh purgatives; they rather aggravate the trouble. For a gentle, but sure laxative, use Chamberlain's Tablets. They stir up the liver, tone the nerves and freshen the stomach and bowels just like an internal bath.

Old age should be the most pleasant time of life. You can make it so by using Chamberlain's Tablets, and ensuring regularity and good digestion.



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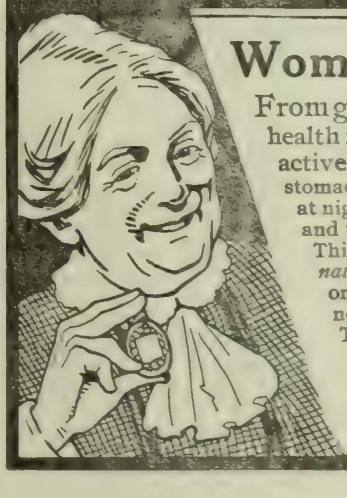

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From girlhood to old age, these little red health restorers are an unfailing guide to an active liver and a clean, healthy, normal stomach. Take Chamberlain's Stomach Tablets at night and the sour stomach and fermentation, and the headache, have all gone by morning. This old, reliable remedy supplies the gentle *natural* cleanser that a woman's delicate organism needs. Not harsh, but sure—not habit-forming but Nature-building. Try Chamberlain's Tablets to-day.

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LIVE STOCK.

GRAIN MIXTURE FOR CALVES

The thriftiness and rate of gain made by young calves depends very materially upon the kind and amount of grain consumed by them. If properly managed, an average calf will begin consuming grain at 10 days or two weeks of age. The grain is not furnished to supply protien to the young calf, as an adequate suppl yof this nutrient comes from the skim milk fed. The fat, however, has been removed from the milk, and a supplementary material must be furnished. The use of home-grown grain is advisable in the feeding of all classes of live stock for which it is adapted. Such grains as corn, oats, barley, and kafir are excellent feeds for the young calves. Ground corn and oats, half and half by weight, form a splendid dry mash. The use of mill by-products is not recommended unless special quality in the growing calf is desired, regardless of cost. Wheat bran may be substituted for ground oats if oats are not available or are less economical.

The young calf will consume a very small amount of grain at first. It may be encouraged to eat this class of feed by placing a small amount of the dry meal in its mouth immediately after feeding the milk ration. The grain may be placed in a small box at a convenient location in the calf's stall, and thus stimulate the calf's appetite for dry feed. The meal should always be kept fresh and sweet by frequent changes. After the calf is two months of age it should be required to consume this grain immediately after feeding. After the calf is two or three months of age whole grains may be fed with as good results as the ground feed.

WHY BREEDERS SHOULD USE THE TUBERCULIN TEST

Tuberculosis presents to every dairyman and cattle breeder a problem that is becoming more and more acute. The herd that is free from the disease now may not be after the purchase of another animal. The time for the farmer whose herd is still healthy to take up the question is before any more animals are purchased.

It has been shown that disease organisms in the milk of tubercular cattle are able to produce tuberculosis in children. It is estimated that out of every fourteen cases of tuberculosis in men, one is due to infection through the consumption of contaminated dairy products. At least one herd out of every four has this disease.

It is true that the milk of herds in which there are tubercular animals must be used as human food, but neither by the farmer himself nor by others should it be used until it has been so treated by heat as to kill any tubercle bacilli it may contain.

A herd is free from tuberculosis or it is not. In the first instance the effort should be to keep the herd free, and in the second to free it from tuberculosis. In either case the farmer must rely upon the sole method we possess for the detection of the disease in its earlier stages—the tuberculin test. Even this is not infallible.

The first step is to determine the condition of the animals by applying the tuberculin test to the entire herd. If all the animals have been in the herd for some months, and no evidence of the disease is detected by the tuberculin test, the owner may be quite certain that the herd is free from it.

The most frequent manner by which the disease is introduced into the herd is by the purchase of an infected animal. This may be avoided largely by applying the tuberculin test to the animal purchased and by learning the previous history of the herd. At the beginning—the so-called "period of incubation"—the tuberculin does not produce the characteristic fever by which the disease is recognized, but if the history of the herd shows that but few cases have been present within recent years the purchaser may be assured that the non-reaction is almost positive evidence that the animal is free from disease.

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Gets the Potatoes and separates where no other digger can

A strong statement, but an actual experience many times, saving growers more than the cost of the Digger. Ask us for the proof.

The Eureka elevator and duplex shaker provide more separation than other diggers. Large wheels and main gears supply ample power. Mostly malleable and steel, avoiding frequent breakage and lost time. Growers report digging 80 or more acres without repairs. High clearance over shovel prevents weeds and vines bunching. Has vine-turner attachment.

6-ft. and 7-ft. sizes; several styles.
Prompt shipments from distributing points.

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You men who want the real thing in underwear — garments that have the weight, the warmth and the long-wearing softness peculiar to Maritime wool — ask your dealer to show you

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Feel its quality—try its strength and elasticity—notice its substantial weight and neat finish—and think of the warmth and comfort it will mean when the raw, cold weather comes!

Once you have worn this splendid underwear, you'll realize why thousands put their faith in the ATLANTIC Trademark.

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Any farmer or dairyman ought to just about double his profits, by carrying out the hints given in our book about

EDWARDSBURG GLUTEN FEED

Edwardsburg Oil Cake is better than Corn for fattening Hogs

It tells how others **are getting more milk from their cows**—more profit from their feeding—and at the same time, **are reducing their feed bills.**

Write for a copy—sent post paid on request.

23% PROTEIN GUARANTEED

THE CANADA STARCH CO., LIMITED
MONTREAL 303

The purchaser may insure himself to a high degree against trouble by testing the animal at time of purchase, by keeping her out of the herd for sixty days, and then applying a retest.

Some who are enlarging their herds by purchase will not succeed in keeping tuberculosis out in spite of all precautions, but if the entire herd is tested each year it is very probable that the disease will not spread to any extent between the time of the introduction of the animal and the next test. Thus no considerable losses will be met.

The elimination of tuberculosis from a herd may be an easy task or a difficult one. If fifty per cent of the animals are found to be tubercular it is usually wise to handle the herd as though all the animals had been found diseased, since those that do not react to the test have the disease in such a stage that the tuberculin will not detect it. From such a beginning a healthy herd can be obtained by removing the calves at birth from the herd and feeding them on milk that has been heated.

When a smaller percentage of the herd is found tubercular the reactors should be removed, and the other animals retested at intervals of 6 months until no more tubercular animals are found, and at yearly intervals thereafter. When you attempt to get rid of tuberculosis, persist!—E. G. Hastings.

CHOOSING A GOOD SIRE

In selecting a ram, keep in mind that the ultimate object of raising sheep is the production of mutton and wool. Different conditions make necessary different types of sheep, so that no one breed or type will fit all conditions. One likes to see a mutton ram with a strong, broad nose, bold front, and a short, strong neck. These masculine characteristics indicate prepotency—that is, the ability to stamp his characteristics on his offspring. A clear skin indicates a vigorous and healthy condition. Excessive fat is not advantageous; frequently it is a detriment. A medium condition of fat is most desired.

The fleece deserves more attention than has been given it. If one can increase the shearing quality of his flock 5 per cent without injuring the mutton quality, that much is gained. A good shearing fleece should be dense, of good length, and have a soft, elastic feel, indicating a healthy condition. A dead, harsh, dry feeling fleece should be avoided.

The use of a good sire is one of the recognized principles of improving live stock. This principle is fundamental. However, some breeders, through neglect or a lack of knowledge and interest in improved types, use sires which retard the general quality of their flocks and herds. A good, strong yearling ram should be able to serve fifty ewes. A good ram when used on a flock of grade ewes is in many cases more than half the flock, because he will usually have greater ability to stamp his character on the offspring than will the ewes. So with a small flock of grade ewes, worth from $8 to $10 per head, one can afford to purchase a good mutton ram. As the value of the ewe flock increases one can afford a higher class ram. It is economy to have a ram of superior character at the head of the flock.—Breeder's Gazette.

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KENT MILLS GOLD MEDAL FLOUR

QUALITY STANDARD FOR 30 YEARS

From a small beginning thirty years ago, but with a fixed purpose—and that was that the product of the "Kent" mills should be the finest flour that the finest of Canadian wheat could produce—the output of Kent Flour has increased from a few barrels a day by the old millstone process to an output of over two hundred thousand barrels a year by the most improved machinery known to millers to-day.

In a generation the demand for Kent Flour has increased from a most limited local sale to a trade that includes all Canada; from the time when all customers could be supplied in a short haul by the local mill delivery to a sale in 1916 that means train loads east, west, north.

"Quality" has been the keynote to a success and reliability and uniformity that have made Kent Flour a household word.

Kent Flour has always been ground from the finest blends of Canadian wheat—and always will be—and that is why it produces bread, cakes and pastry, that are a delight to the housewife.

All reliable dealers sell Kent Flour.

Sold in 24, 48 and 98 lb. sacks. Half Barrels and Barrels.

There's a treat waiting for you when you use "KENT" Flour

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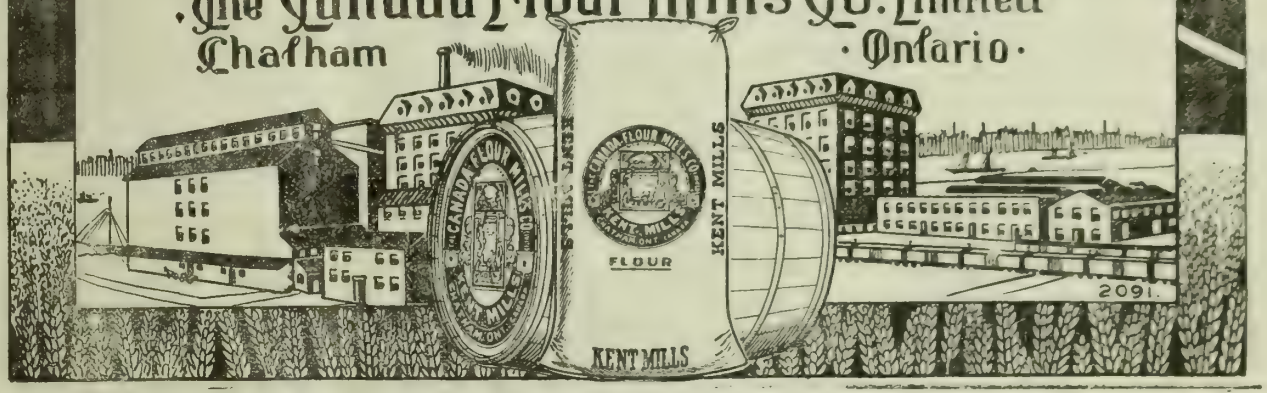


DOSING A HOG WITH AN OLD SHOE

In addition to what was said in the issue of July 21st of the Ottawa Valley Journal in a spicy little article under the title "How to Dose a Hog," the following plan is offered which is easy and as safe as any plan that can be used: Take a ⅜-inch rope with a loop or ring in one end, slip this into the hog's mouth just back of the tusks. The animal will then pull backward. Next take an old shoe, cut the toe out so that the medicine will run through, put the shoe into the hog's mouth, and pour the medicine into the shoe. The hog will chew away at the shoe and swallow the medicine with comparatively little danger of harm. In the operation it is better to have a helper than to fasten the rope to a post, for the helper can raise and lower the head and not pull harder on the rope than is necessary. Do not raise the rope head higher than necessary to cause the medicine to go down, and do not pour in too fast.

However, the drenching of a hog is always a somewhat serious operation, and should never be undertaken if the animal will take the medicine with food, which it will usually do if starved for a day. The best practice, however, is not allow them to get sick by giving them such food, care, and management as will secure to them almost certain freedom from sickness or disease.

Home butter makers are apt to forget that butter worked too warm is unsatisfactory in color and flavor. Watch the temperature.

Dr. Cassell's Instant Relief

LIVER TONICS
ANTACIDS
CARMINATIVES
LAXATIVES

Prepared by

Dr. Cassell's Instant Relief is the companion preparation to Dr. Cassell's Tablets.

Liver Troubles, Sick Headache, and Habitual Constipation.

Liver troubles and habitual constipation can be cured—but not by cathartic or purgative medicines. The only possible way is to help your system to cure itself; and that is what Dr. Cassell's Instant Relief so surely does. It is not cathartic, it is not violent, it is quite different to the coarse purgative preparations in common use. These only irritate and weaken; Dr. Cassell's Instant Relief tones and strengthens the liver and bowels, and so restores their power to do nature's work in nature's way.

Take Dr. Cassell's Instant Relief for constipation, biliousness, liver troubles, sick headache, flatulence, acidity, heartburn, and impure blood.

Ask your Druggist for Dr. Cassell's Instant Relief and take no substitute.

Price 50 cents from all Druggists and Storekeepers,

or direct from the sole agents for Canada, Harold F. Ritchie and Co., Ltd., 10. McCaul-street, Toronto. War Tax, 2 cents extra.

Sole Proprietors: Dr. Cassell's Co., Ltd., Manchester, England.

PROOF

"Science Siftings," April 11, 1916, says—"Providence has given us the brains to devise means to compensate Nature for our ill-treatment of her. . . . The means at hand come from natural sources, and we have them embodied in such splendid combination as Dr. Cassell's Instant Relief. We take this preparation as an example because it is so well balanced in the matter of components and so effective in every direction."

Was Troubled With CONSTIPATION FOR OVER FIVE YEARS.

Unless one has a free action of the bowels, at least once a day, constipation is sure to ensue, then in the wake of constipation comes sick headache, bilious headaches, jaundice, piles, and many forms of liver complaint.

Milburn's Laxa-Liver Pills will regulate the flow of bile to act properly upon the bowels, thus making them active and regular, and removing the constipation and all its allied troubles.

Mr. Phil. G. Robichaud, Pokemouche, N.B., writes: "I have been troubled with constipation for over five years, and I feel it my duty to let you know that your Milburn's Laxa-Liver Pills have cured me. I only used three vials, and I can faithfully say that they have saved me from a large doctor's bill."

Milburn's Laxa-Liver Pills are 25 cents per vial, or five vials for $1.00; for sale at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

THE HORSE

SHOEING PADDLING HORSES

A four-year-old trotting colt is well bred and of good size, but is "nigger-footed." How shall I have him shod? I would like to improve him for driving.—B. J. S.

A horse with "nigger heels" should have its feet lowered from the toe back, on the outside, at each shoeing. "Nigger heels," paddling, winging, toeing in, and knee knocking all result from neglect save in rare instances. The feet of foals and young horses need regular attention. The average right-handed blacksmith will use his rasp more easily on the same side of each front foot and often cause a horse to hit its off knee. The right foot is the one generally marked. Confirmed "nigger heels" in a mature horse are hard to correct. At speed such a horse will hit his knees and require a metal-lined foot. A toe weight helps to true the action, but the safest plan is to heed the maxim of the old-time Vermont horseman, father of a noted driver of today: "Never have anything to do with a horse that toes out or a woman that toes in." Doubtless the first half of the maxim is all that any Gazette reader would require.—Breeders' Gazette.

TRAINING DRAFTERS TO WALK

A draft horse which walks badly is likely to be turned down at a show; the drafter's gait is the walk. It is not always easy to develop the walk in a high-fed horse, or get it to show the walk at the proper time. Perhaps we should get along better if we cosnidered the matter from the horse's point of view.

The stallion in hand is a more natural animal than in harness. Horses do not often walk when anxious to go somewhere. The walk is preliminary to the trot and the trot to the canter or gallop. A high rate of speed at the walk is not natural to the horse. He breaks into a jog which he can keep up indefinitely without fatigue. When he takes a walk it is in the nature of a stroll. A horse should be taught to walk as perfectly as a saddler is taught to single-foot or canter. If this is to be developed the horse must be walked when fresh and full of the forward impulse. The show horse is an actor. His part must have been learned at rehearsal. When he comes before the public he must stand and walk as an art. The more impulse there is to action and the faster the movement the better. Let the horse show that he is ready and fit for anything, but that he awaits his cue. Nothing looks worse than an effort at education in the show ring. Judges know that horses should be trained before they enter the ring. If the horse does not do it it will be assumed that he can not.

A walk that springs from hock action, with the iron flashed at every step, demands condition. The horse must be well collected, with the hind quarters well under, which brings the fore quarter to a good carriage, and we get the effect of a contained power that would find its limit in the strength of the harness rather than the weight of the load. A draft horse at a fast, collected, well-poised walk is as grand a thing as moves. Adrafter than can not walk and show pride in the accomplishment, but must ape the trotter, is a vain thing and futile, like the frog that tried to blow itself up to the dimensions of the ox, or a nightingale that would trade his voice for a peacock's feathers.—L. Ogilvy, in Breeders' Gazette.

OVERHEATED HORSES

On some farms horses are never overheated; on others it is the common thing in summer for one or more horses permanently to be injured or even killed outright by heat. The difference is in the care of the horses, and mainly in the feeding, watering, and stabling. Horses that are skilfully and watchfully cared for in summer, so as to keep them in the best of health and vigor, can endure a degree of exertion in the hottest days that would strike down an ill-nourished, weakened animal. If a horse gets too hot to eat it is time to look after him and not wait until he plays out the next day. It takes a big daily supply of grain to furnish the energy for hard work in hot weather. Without that energy the horse gets weak and is also less able to get rid of the surplus heat from exercise.

When horses are working in hot weather and sweat suddenly stops it is time closely to examine them. If the horse's hair is dry when expected to be wet, and he is panting rapidly, or if he staggers when walking and braces the legs when standing, with a general appearance of depression, he has been pushed ahead too long. Before the animal gets worse off than that it is best to get him into the shade. If the signs of distress continue, or if the horse has gone down, the usual course is to wash him all over with water, apply cold water or ice to the head, and cold water to the legs. A good home stimulant for such cases is 2 ounces of aromatic spirits of ammonia, or 2 ounces of sweet spirits of nitre in a pint of water; or give a pint of warm coffee. These are the measures especially recommended to teamsters by the Boston Work Horse Relief Association.

Careful attention to the health of horses in hot weather, and watching for the first danger signals in the field, enable some of the greatest hustlers with farm operations to get a surprising amount of harvest work done with each horse, and without ever killing one from heat. It pays to be careful and to anticipate hot weather trouble so as to prevent it. An overheated horse is a poor piece of property, and the overheating can be avoided.

THE COLT'S FIRST SUMMER

Gains during the first year of the colt's life are cheaper than at any other time. Attention to feeding and exercise may reduce the cost even more than usual.

The colt should be encouraged to eat a little grain as soon as he shows any inclination for it. Usually he will begin to eat when he is about a month or six weeks old. A mixture of equal parts of crushed oats and bran makes a nice feed. Only as much as the colt will clean up nicely should be fed. It is not well to try to keep the troughs filled. Some fresh skim milk may also be fed to advantage if only a little is given at a time.

Following his mother in the field when she is at work takes too much of the colt's energy. He is better off in a dark barn away from the flies during the day, if he is turned out to exercise at night. For the first six weeks he should be allowed to suck about the middle of each morning and afternoon. If handled in this way the colt may be weaned when four or five months old without missing the mother's milk and without losing the colt fat that should be kept on his back to carry him through the first winter.

With present market prices every colt of good draft breeding ought to return a good profit if fed so as to make the maximum development.

FEEDING FARM HORSES

Experiments have been carried out with the object of ascertaining the relative value of various rations for farm work horses in respect to the following points:

(1) Maintenance of weight; (2) health, spirit, and ability of horess to endure hard work. The economy of each ration was also considered. The following were some of the conclusions reached:

1. Clover hay is quite as efficient as, if not a little superior to, timothy hay for horses at hard work, when a mixed ration of maize, oats, oil meal, and bran is fed.

2. Both kinds of hay had a similar effect on the spirit of the horses. Those receiving clover, however, had a glossier coat.

3. When clover is used as a horse food the quality should be good, and a limited quantity should be fed.

4. Where lucerne hay is the fodder supplied to farm horses at hard work, less grain is necessary to prevent them from losing weight than when timothy is fed.

5. A saving of about 10 per cent may be made by grinding the grain of farm horses when at hard work.

Farm horses at hard work should receive 1 1-5 lbs. of grain, and from 1 to 1 1-4 lbs. of hay per 100 lbs. of live weight per day in order that their weight may be maintained.

Doctor Said Only Hope Was in an Operation

Was Skeptical When He Began the Use of Dr. Chase's Ointment—Relief Came Quickly.

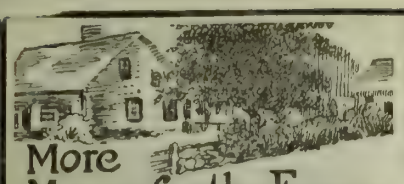
Here is a plain, honest statement in regard to Dr. Chase's Ointment. Between the lines of this letter you can read the gratitude which its writer feels. One does not suffer from annoying, distressing piles for ten years without appreciating a cure when it is obtained.

Almost every mail brings the report of some one who has been cured of piles by the use of Dr. Chase's Ointment. Such statements are never used without the permission of the writer, and until we are satisfied that the cure is genuine and the writer a person of responsibility.

You may believe in operations for piles, and think there is no other cure. Write to Mr. Ingles, enclosing stamp, and he will gladly verify his statement. He will tell you that the pain, the expense, the risk of an operation are quite unnecessary. That relief and cure come with the use of Dr. Chase's Ointment.

Mr. Ernest W. Ingles, Pindicton, B. C., writes: "I suffered from piles for ten years, and though I tried all kinds of ointments and injections I really had no permanent relief until I used Dr. Chase's Ointment. When I began this treatment I had absolutely no faith in it, for I had been examined by a well-known physician in Vancouver, and he said that an operation was the only thing that would benefit me. It was surprising the relief I obtained from the very first box, and now after using four boxes I am practically cured. My case was so exceptionally bad that I received no relief day or night, and for this reason the results are wonderful."

You can obtain Dr. Chase's Ointment from any dealer at 60 cents a box. If you do not want to risk this much send a two-cent stamp to pay postage, and mention this paper, and we shall send you a sample box free. We are so certain that any sufferer from piles will obtain relief by using this ointment that we do not hesitate to make you this offer. Edmanson, Bates & Co., Limited, Toronto.



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If you suffer from bleeding, itching, blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured. Send no money but tell others of this offer. Write today to Mrs. M. Summers. Box P. 309 Windsor, Ont.

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Gentlemen—I have frequently used MINARD'S LINIMENT and also prescribe it for my patients always with the most gratifying results, and I consider it the best all-round Liniment extant. Yours truly,

DR. JOS. AUG. SIROIS.

DETERMINING SEX OF DAY-OLD CHICKS

With the rapidly growing day-old chick industry the question of sex determination naturally arises. Many buyers would like to order all pullets, all cockerels or a given number of each, and would be glad to pay an additional price for this assurance.

The sex of Barred Plymouth Rock chicks can be told with a reasonable degree of accuracy. The pullet has a dark, willow-colored beak, sometimes streaked with black. It is of finer bone than the cockerel and the legs are dark and smoky colored. The cockerel has bright yellow legs and beak and usually a coarse head and prominent eye. The cockerel is a gray or slate color, while the pullet is darker. The white tip of the wings and spot on top of the head are more noticeable on the pullet, due to the contrast with the deeper black. This means can only be used to denote the sex the first couple of days. After this time they all take on the one characteristic blue color, the beak and legs of the pullet fade out to yellow.

Similar methods can be employed with all parti-colored breeds. With solid-colored birds the best means of determining sex is the prominent cockerel.—C. S. Anderson, Colorado Agricultural College, Fort Collins, Colorado.

SURE DEATH TO MITES

The common red mite which is most active during the warm weather is commonly found about the roosts and dropping boards also about the nests, and many times in brooders and coops for the hen and her chicks. The mite is easily held in check if proper methods of control are used. While kerosene will quickly kill them, it evaporates in a few days.

Any of the coal tax mixtures are more effective. Carbolenium is recommended highly by the Connecticut station. Containing a coal tar product and carbolic acid, it acts as a wood stain and remains effective for a long period of time, being even more effective than pure carbolic acid. One application a year is generally sufficient, but it must be used with discretion.

An excess amount either on the roosts or on the adjoining boards may result in eye trouble to the hens or chickens. To avoid this it is best to make the application when changing the chicks from one house to another, allowing at least two days for the mixture to dry before using the house. If this cannot be done dilute it with kerosene and apply lightly with a brush.

If roosts are allowed to dry outside of the poultry house there is less danger of injury to the fowls. The roosts should be removed and painted, the roosting boards thoroughly cleaned, then painted being sure to use the carbolenium very liberally in the cracks between the boards. In badly infested houses or where mites shows signs of returning, it may be necessary to make a second application.

MEAT AND BONE

The chicks need considerable ash or mineral matter in their ration in order to make a satisfactory growth. This material goes into the formation of bone and skeleton. They must also have considerable protein or nitrogenous food material to go into the formation of lean meat. The ash or mineral matter can be supplied in the form of dry granulated bone, which can be purchased for about $2 a 100 pounds. It contains approximately 25 per cent protein and from 23 to 25 phosphoric acid. The additional quantities of protein can well be supplied in the form of meat scrap. The protein in this can be purchased for about 5 cents a pound. Only a high grade meat scrap carefully rendered and containing from 50 to 55 per cent of protein is advisable to use.

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I can say that I have for the past three years been a user of GOMBAULT'S CAUSTIC BALSAM, and have found it to be all that is claimed for it, and have in a great many instances recommended its use to others.—R. D. KIRK, Antigonish, N.S.

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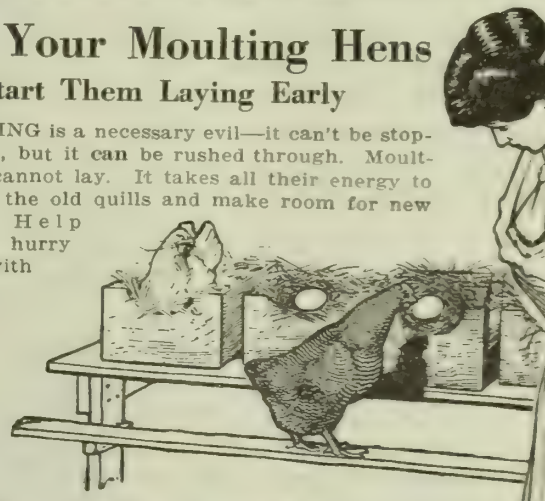

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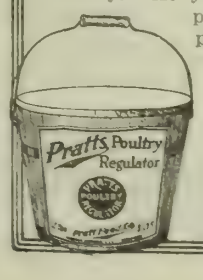

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

THE UNSPOKEN DREAD

As Sir Anthony cracked a nut for Lady Sotheran, he turned to her aunt, Lady Ullswater.

"And where does your son, Oscar, hide himself nowadays?" he said. "Every time I've been to Ullswater Hall of late I've had the ill luck to find him out, or gone away, or not up, or indisposed, or something."

There was a pause all round the table.

Lady Ullswater's fingers were trembling, and she was biting her lips. At the foot of the table old Peter Lucas, a connection of hers through marriage, lifted his white brows nervously up and down. Lady Ullswater broke the curious silence at last.

"Hide himself!" she said, with a forbidding note utterly foreign to her gentle character. "How do you mean hide! My son, Oscar, is studying hard just now—too hard, I think"—her voice trembled as she spoke—"and shuts himself up in his own room. In the morning he is tired—and lies in bed."

"So we—we don't see quite as much of him—as we—as we used to," concluded Lady Margaret. Sir Anthony felt more than saw, for he did not like to look straight at her, that an expression of great pain had come into her face.

"I should like to show you a wonderful piece of embroidery my grandmother did when she was a little girl," broke in Lady Ullswater, in her usual brisk manner. "I unearthed it yesterday from an old chest, and it's really a marvelous work of art for a child of fourteen. It's in the drawing room. Shall we go and inspect it, Margaret, and leave Sir Anthony and Peter to their wine?"

A pause followed on the withdrawal of Lady Ullswater and her niece. Sir Anthony, thrown into confusion by the effect that his casual observation had created, turned cautiously to old Mr. Lucas when the servants had left them alone.

"Anything up with Oscar Howden?" he said, in a low voice.

Old Old Lucas shook his head and looked round him, lowering his voice, too.

"No—no, not at all, as far as I'm aware," he said.

Sir Anthony fell into an abstraction from which the old man took no pains to rouse him. He could not understand the thing. He had known the Ullswaters for long years, and his tried friendship had been rooted in many of the family chances and mischances. He remembered the death of Lord Ullswater, the coming of age of Oscar. He was at Ullswater Hall when Margaret Sotheran left an orphan and an heiress, came as a girl of seventeen to live with Lady Ullswater, her aunt. He had seen Margaret and Oscar gradually falling in love with one another, seen their attachment tested in a hundred ways; he had been the first to hear of their engagement. There was nothing, he flattered himself, about the Ullswater affairs which he had not known for weeks before report gave it as current gossip to the world. Lately Sir Anthony had been abroad, but kept up his regular correspondence with the family. There was no mention in their letters of any strange development in Oscar's character or life, and when, on his return, he visited Ullswater Hall there was still no indication of anything amiss, except that latterly, as Sir Anthony remarked, he had seen nothing of young Howden every time he called.

At this point old Mr. Lucas rose, suggesting that it was time to join the ladies. As the old man opened the drawing room door Sir Anthony turned back into the hall, remembering that he had left a letter in his breast pocket, when he heard a door shut behind him. He turned, and saw Oscar Howden coming toward him. Oscar stopped short when he saw Sir Anthony, and made as if he were going to turn back. Then he seemed to change his mind, and advanced upon him rapidly. Sir Anthony noticed his expression immediately, which was at the same time dreamily abstracted and nervously excitable. The eyes had a fixed, far-away look, yet they were full of fire. The skin of the face was drawn and white—the look almost of dead flesh—and there was a muscular tension round the mouth.

Opium! Sir Anthony said to himself. Then he rebuked himself for the thought. "Hello, old chap!" he said affectionately to Oscar. "I haven't set eyes on you for I don't know how long."

"Yes—I know. How are you?" Oscar replied, without the faintest note of interest in his voice. He advanced with a hurried step to the hall door, buttoning the overcoat which he was wearing round his throat. Sir Anthony caught the sound of the chink of iron or steel. He did not even loo kat him. "I'm—I'm in rather a hurry," Oscar continued, opening the door. "Excuse me, won't you, old man?"

He stood a second on the doorstep, pulled the door to behind him, and went out into the night.

Returning to the drawing room, Sir Anthony found Lady Margaret sitting at the window by herself. She turned her head as Sir Anthony entered the room with an expression of anxiety on her face. He crossed the floor and sat down beside her.

"This is the letter from my mother about the poor girl in whom you are interested," he said quietly. "Read it; it will tell you——"

"Did some one shut the hall door just a minute ago?" she said.

Sir Anthony hesitated. Then he answered: "Yes, it was Oscar. He went out."

Lady Margaret made an exclamation, and the look of anxiety deepened in her eyes.

"There!" she said, under her breath "Now it all begins again."

Sir Anthony, who had always cared for Margaret in another way perhaps than that which was obvious to outsiders, watched her face for a moment before he said:

"What begins again?"

"The anxiety," she said. Sir Anthony paused. Then he leaned forward and lowered his voice.

"Margaret," he said, "is everything between you and Oscar just—just as it used to be?"

Her eyes filled with tears. "With me—just, just the same," she answered.

"And Oscar?"

"Oscar has changed," she said, in a low voice. "Anthony," she continued, "I've not said a word to any one but you; but you don't know how troubled we are about Oscar. You know what—what he used to be to me—what we were to each other——"

"I know—I know," said Sir Anthony.

She looked up suddenly with her young face lined with anxiety.

"You're sure it was Oscar who went out?" she said.

"Why, certain," he answered. "I saw him."

She wrung her hands. "I shall never sleep" she said, "not knowing where he is."

"But he'll be back in an hour or so," began Sir Anthony. "I expect he's only gone into the park."

"He won't be back," she whispered.

"What d'you mean?"

"It's always happening," said Lady Margaret. "Over and over again. He disappears for days. He tells nobody. Nobody knows where he goes. And he's—he's so strange, we daren't say anything to him."

"But how long has this been going on?" Sir Anthony inquired.

"For some months," said Lady Margaret.

Sir Anthony did not know what to say. Her distress and the cause for it were so real that an attempt at consolation seemed a mockery. "Never mind Margaret," he said after a pause. "It's bound to come right in time—whatever it may be—and things between you and Oscar will be just as they always were."

Lady Margaret sighed heavily. "But he's been so different to me and to Aunt Marion for so long now," she said. "His manner even is changed to us—he doesn't seem to care—about—about anything now. The least little thing makes him irritable. To give you one instance out of a hundred: We were walking in the park last night, and I tried to climb the big tree that overhangs the paved walk near the shrubbery—you know, you can see it from my room. I saw he didn't like it, and as I was jumping down again I laughed and said I was sure the ground was hollow underneath—it had such a hollow ring. He turned on me and said he didn't like to see me talking and behaving like a silly schoolgirl—I was too old for that—and women were such a pack of fools——" She broke off, and looked appealingly at Sir Anthony. "It seemed an innocent remark," she said. "What harm was there in it? But he was so irritable to me that Aunt Marion had to speak to him."

The wind, which had risen suddenly, drove a sheet of rain against the windows and shook the old house in its grasp. "Listen!" said Lady Margaret. "To think of him out in that! If he is out——" She broke off, and turned her grey eyes, filled with sorrow, full on his face. "Anthony," she whispered, "from what I've told you, you don't think—you don't think it's another woman?"

"I don't believe it for a second," Sir Anthony was saying stoutly when Lady Ullswater crossed the room to him.

"You'll stay the night with us, Anthony," she said abruptly, "won't you? I don't like to think of you out in a storm like this. Peter has gone. I couldn't persuade him to stay But you'll not leave us tonight?"

Sir Anthony glanced at Lady Ullswater's face. It was harassed and worn.

"Thanks awfullyy, Lady Ullswater," he said gravely. "I'd rather stay the night than turn out into the storm." For he understood that Lady Ullswater was making an appeal to him.

All that night the wind howled and the rain came down. The morning broke more quietly, but still in a sheet of rain. Sir Anthony, who had not slept well, owing to the storm, left his bedroom early. Going along the corridor, he met Lady Margaret, her hair loose, a dressing gown about her, hurrying toward him.

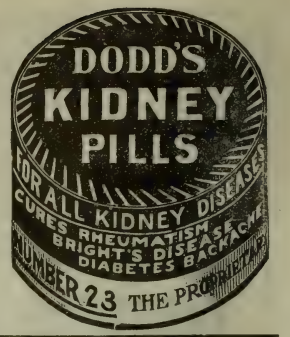
"What a night, Anthony!" she exclaimed. "I scarcely slept at all, did you? And I kept on hearing such strange noises in the storm—I'm sure the house is haunted."

Sir Anthony smiled. "What sort of noises?"

"Horrid subterranean noises," she said, "as if all the wicked spirits of the underworld were trying to dig a way out into this world." She stopped and turned to him. "Did you hear——" she began. Sir Anthony knew what

A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, lesire to cry. palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health. strength, and happiness by this method. Write today. Address: Mrs. M. Summers Box 309, Windsor, Ont.



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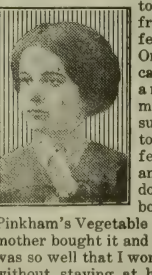

Taunton, Mass.—"I had pains in both sides and when my periods came I had to stay at home from work and suffer a long time. One day a woman came to our house and asked my mother why I was suffering. Mother told her that I suffered every month and she said, 'Why don't you buy a bottle of Lydia E. Pinkham's Vegetable Compound?' My mother bought it and the next month I was so well that I worked all the month without staying at home a day. I am in good health now and have told lots of girls about it."—Miss CLARICE MORIN, 22 Russell Street, Taunton, Mass.

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she meant to add—if Oscar had come back. He shook his head. "I'm going to look in his room," she said. They turned together and looked down the long passage. "His door is open," she whispered. "He may have gone down stairs."

But when they had all assembled in the breakfast room it was only too apparent from the air of reticent anxiety in all that Oscar Howden had not returned.

The day wore on; still there was no trace of Oscar, and Sir Anthony spoke to Lady Ullswater about getting home. He saw the harassed look come back into her face.

"I wish you'd stay with us a day or two, Anthony," she said, in her reserved voice. "My son, Oscar, is—is away—on business—and since my husband died I've never got accustomed to living in a house without a man."

Again Sir Anthony deferred his plans, for it seemed to him it was his duty to stand by Lady Ullswater as long as she had any need of him. All morning Lady Margaret looked restless and unhappy. After lunch it was evident that she could bear the uncertainty no longer. She said that she must do something; she was going to visit the poor women in whom she and Sir Anthony's mother took an interest. The woman lived in the village, which was a mile or two away. Lady Margaret said she would be back in time for dinner.

Just as the first gong went at half past seven that dark winter's night Oscar Howden came back. Lady Margaret was upstairs changing her dress. Sir Anthony, who knew of his return, watched her face when they were sitting down to soup and the door opened and Oscar came in. It flushed all over with relief and surprise, but she said nothing. Lady Ullswater looked a different woman now that the suspense for the time being was gone. Sir Anthony thought the behavior of the two women, so charged with an inner relief which was strenuously concealed, profoundly touching. The servants, too, showed not the faintest curiosity at his reappearance, nor did anybody by the least sign betray the anxiety and alarm which they had recently been through.

In order to relieve the general nervous tension Lady Margaret began to talk about the woman in distressed circumstances whom she had visited that afternoon.

"Such an intelligent woman, too," she said; "quite well informed and interesting to talk to. And, by the way, she asked me if I'd ever heard the old legend about this house."

"Legend?" said Sir Anthony, to prolong the impersonal conversation.

"I shouldn't listen to the superstitious tattle of the village woman, Margaret, if I were you," Oscar remarked suddenly and rather rudely.

She tried not to look hurt, but Sir Anthony now saw what Lady Margaret meant by what she called Oscar's habit of "falling upon her."

"Yes; a curious legend about the old Romans and Ullswater Hall. You Know," she turned to Sir Anthony, "the old Roman remains about a mile from here? That made me wonder if there mightn't be some truth in what she said. She told me it was commonly believed that when the old Romans came over here as conquerors they captured a princess of the Iceni tribe, who was marvelously beautiful. It was said she led her people out to war and that a Roman general, seeing her courage and loveliness, fell violently in love with her, and bribed a serving woman to betray her into the hands of his soldiery——"

"I wonder you can listen to such nonsense," Oscar broke out, almost savagely. Before his aspect toward Margaret had been utterly indifferent, now he looked as if he almost hated her. Lady Ullswater turned quietly to him with rebuke in her eyes.

"Go on, please, Margaret," she said; "it is extremely interesting."

Lady Margaret went on, though his

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RED ROSE TEA "is good tea"

contempt had taken the assurance from her manner.

"She told me that he was supposed to have built a subteranean chamber to hide her in, for fear her people, who idolized her, should find her whereabouts and steal her away from him. She said that he shut her up there, down in the earth, and that he bound her to an altar, and visited her secretly at night, inflicting tortures on her to make her say that she would marry him."

"A very curious legend," said Sir Anthony. He was watching Oscar Howden, who at this point was listeninfi to what Lady Margaret said with a kind of suppressed excitement in his eyes. Lady Margaret saw that she had interested him at last, and it gave her confidence to conclude.

"At last the poor princess went mad," she ended, "and after lingering miserably died in that dreadful prison underground. But the interesting part of it is: that she is supposed to haunt the cavern now, and sometimes you can hear her shrieking underground as they torture her. A long, long time ago—several centuries, I think—a former tenant of Ullswater is believed to have found the entrance to the chamber and sealed it up again. They say he saw the princess. And you can see her sometimes now, if you have the power, escaping from her prison at night. She is so beautiful that no man who has looked upon her can look upon another woman again. He cannot put the thought of her away from him, but he must seek her till he has speech with her, till he touches her. But if he kisses her he dies of the breath of her lips."

"Really!" said Lady Ullswater. "How strange, and rather terrible."

"Aunt Marion, did you ever hear the legend before?" said Margaret.

"Never," said Lady Ullswater. "It's strange, but I never have."

"I should think you haven't!" Oscar sneered. "Tales like that are only circulated and listened to by the sort of people who have nothing better to do than imagine a supernatural significance in the way a cat washes its face, or a horse shoe falls from an old horse." He got up from the table looking irritable and nervous, and Sir Anthony noticed that he was sufficiently annoyed to forget that he had left behind him a little brown paper-covered volume lying on the table.

"I don't know," said Margaret, under her breath, when he had gone. "I do believe in the reality of many things that most of us can't either see or feel."

As Lady Ullswater and Margaret went out after dessert, Sir Anthony possessed himself of the little book covered with brown paper and glanced at the title page. It was a pamphlet on the "Invocation of Spirits," by some one with several letters after his name. He put the book in his pocket.

Late that night Sir Anthony awoke with a feeling of excitement and uneasiness upon him. He rose and put on some clothes, went to the window and looked out. It was the wind, he supposed, which had prevented him from sleeping, for again the night was wild, and the trees were tossing in the park. A little tap sounded on his door. He went to it quickly, and looked out. Lady Margaret, fully dressed, was standing there.

"He's gone again," she said; and she wrung her hands. "His room is empty. Anthony, I want your help tonight."

"What can I do?" he whispered back.

"Just come into my room a moment," she said, her manner greatly distressed. "I've heard strange noises all the night, or thought I did. And I'm miserably uneasy about Oscar."

She pointed out of the window, and seemed to speak unconsciously.

"There," she said. "I knew——"

"Where?" he asked.

"That tree," she answered. "It's been telling me all night."

He looked at her cautiously, not certain that she was herself. Then she made a sudden movement and took Sir Anthony's hand. "Will you come—will you come with me?" she said.

"Yes, I will come; but where?"

"There—near that tree," said Margaret. "It knows something about Oscar. And I—I know it, too."

"How do you know?" he whispered, as they slipped downstairs.

"It is here," she exclaimed, "it must be here." And she went down on her knees in the drenched grass. Sir Anthony did not know what in the name of heaven she was doing. Yet somehow he dared, or could, not speak. "No further on," she muttered. Still on her knees, she dragged herself toward the paved walk of the shrubbery. Then she exclaimed: "Fresh earth! I smell it!" Her fingers were seeking feverishly in the darkness over the edges of the paving stones. "Here!" she cried.

"Where?" said Sir Anthony, stooping down to her. "What is it?"

"It is open," she answered, with a

DEPARTMENT OF THE NAVAL SERVICE.

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SEALED TENDERS, address d to the undersigned, w ll be received up to noon of the 1st October, 1916, for the purchase of the

Dog-Fish Fertilizer

to be produced at the Dog-Fish Reduction Works at Canso, N. S., and Clark's Harbor, N.S., during the season of 1916 The total quantity that will be produced is estimated at betw en 150 and 200 tons of 2,000 pounds

No particular form is necessary for use in tendering, but envelopes should be distinctly marked across the face, "Tenders for Dog-Fish Fertilizer."

The fertilizer will be put up in bags of 100 pounds each, and a charge of 15 cents will be made for each bag, additional to the price paid for the fertilizer.

Consistent with the price offered, tenders from bona fide agriculturists will receive first consideration; the right is reserved, however, to reject any or all tenders.

Tenders from non-residents of the provinces of Nova Scotia, New Brunswick and Prince Edward Island will not be considered and guarantees must be given that the fertiliz r will not be disposed of or used outside of these provinces.

Tenders should state the quantity required in bags, and the minimum quantity acceptable at the price offered, and from which point it is desired shipment should be made. The price offered should be on the basis of so much per 100 pounds.

Terms of s le are cash within ten (10) days of acceptance of tender fo specific quantities, all charges for transportation from Works to be borne by the purchaser Failure to remit within the time specified will result in the cancellation of tender without further notice, and the allotment being diverted to the next highest tender, or such other as may be in order.

Remittances should be made payable at par to the Department of the Naval Service at Ottawa. Bank cheques will not be accepted unless certified.

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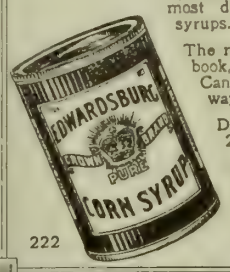

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wild note in her voice. "See here—the paving stone is up. Look!" She took his hand where he knelt beside her. "There!"

Holding his hand, she thrust it down into an open space. "It goes down," she exclaimed. "Now I know. Don't stop me, Anthony."

"What," he cried, seizing her, "what are you going to do?"

"The passage is there," she answered, like a woman who is either mad or inspired. "Don't stop me—I'm going down to him."

"Margaret, Margaret," he cried, "you're out of your mind! For God's sake, tell me what you're going to do——"

She was pushing and scooping at the earth with her small hands; she took not the faintest notice of what he said.

"He got down there," she answered, "so I can."

Now Sir Anthony saw distinctly a bog hole in the ground, and a white paving stone standing upturned beside it where it opened. Lady Margaret lay down flat on the ground and began to crawl forward toward the opening in the earth. He tried to pull her back.

"Margaret," he cried, "you mustn't! You are mad! You want to go down—there—and leave me! It's hollow—it's a chasm—you'll be killed——"

"You can't stop me," she answered. "I know he's there, so I'm not frightened. I'm going to him."

To his horror, he saw the upper part of her body disappearing down the opening; gradually the rest of her body to the tips of her feet disappeared.

Sir Anthony threw himself down on the ground and tried to force his way down the aperture after her.

Then a sound reached him; he stopped short again; the shriek of a tortured thing. What happened, or how he did it—if the aperture had widened suddenly from his efforts—he did

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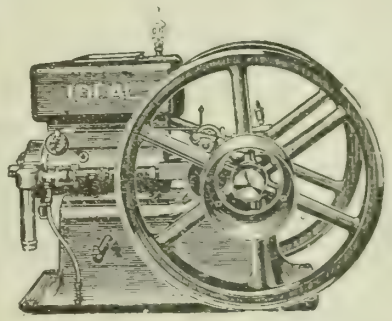

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not know, but when that shriek reached his ears Sir Anthony found himself halfway down the opening of the narrow passage. The ground sloped and slipped beneath his hands; it was wet; it crumbled downward under his body. Down, down he went, but from crawling flat he gradually found himself upon his knees, from his knees he rose to a half-sitting, half-standing posture. At length he stood almost upright, but with bent head, which he felt was touching a roof.

His one thought was to find Margaret, but whether living or dead he did not know. And now he knew, but could not see, that a long passage sloped before him, earth-paved, earth-walled. He felt it wind and turn; from somewhere—from the end of the passage, he thought—the faintest glimmer of light was falling. Blindly he made for the light, but it failed suddenly, and he found himself up against a dead wall. Then he turned back, seeking the light he had lost, and discovered with outstretched hand in the darkness that the passage dipped and swerved again to the left.

Again the little white glimmer of light—and a passage to left, a passage to right of him. He stopped short. There passed over him the sensation of nearness to Something which was aware of him. He stepped aside; he felt it coming on to him—on—— It had passed—passed over him like a breath! He knew that it had gone. Now he knew that he must turn to the right, that the light was coming from there. That something—something was waiting there for him. The light grew nearer, and with the approach of it the passage widened suddenly into a chamber at the end of it.

Then he saw where the light came from.

A little chapel opened before him, ablaze with the sheen of shells, with the dazzle of candlelight. His eye fell on Margaret. She was crouching against the purple mosaic of the chapel wall, and she pointed to an altar encrusted with the moonlight shimmer of oyster shells, covered with masses of Christmas roses and chrysanthemums, gleaming with the golden blaze of candles.

At the foot of the altar lay her lover, with his arms out thrown. The candles gleamed on the dead whiteness of his face.

Lady Margaret was still pointing.

"Look—look!" she whispered. "She has kissed him!"

ESTABLISHING AND MAINTAINING A FARM FLOCK OF SHEEP

(Continued from page 751)

ence to the essentials, or at least keep it in proper proportion.

As he gains in knowledge and experience his ideal may change. Market conditions may require it. He must not forget that the pay for his work depends upon the market, and the demand for his rams as breeders will be largely determined by the more profitable lambs they can produce in the average flock. Whether early maturity, easier fleshing qualities, longer staple, heavier fleeces, or some other distinctive trait be emphasized and developed to a greater extent must depend upon the market which the men who buy his rams must supply. Time was when all the sheep raisers in this country wanted a heavier fleece, because the high price of wool made the heavy shearer the most profitable. At another time the most money was made on a fat lamb, and the wool was a small factor in the equation. While one cannot change with every passing swing of the market pendulum, yet he must consider the various conditions under which he must grow his sheep, the number of men similarly situated, and the prospects for a broad, steady, and continuous market for the wool and mutton from the flocks to which he expects to supply rams.

As he studies the development of the industry in a broad, general way, as he watches the tendencies of the markets and foresees their course, as he governs his breeding operations in conformity with his knowledge and experience and succeeds in supplying a demand which is broad and remunerative, so may he expect to be rewarded. While he will probably receive financial returns amply justifying him in his work of establishing and building a flock which may ultimately be known beyond the confines of his own immediate locality, yet his greatest compensation for the money and time and labor expended must be the personal satisfaction that he has done something worth while.

The development and improvement of one pure-bred flock and its successful maintenance for any length of time inevitably raises the standard of the sheep industry in that community, and its effect extends in proportion to the importance and value of its work. While working for himself the shepherd has labored for his neighbor and for those who come after him. When the time comes for him to leave his earthly possessions it can well be said that he has left the world better for his having lived. What greater tribute can man desire?

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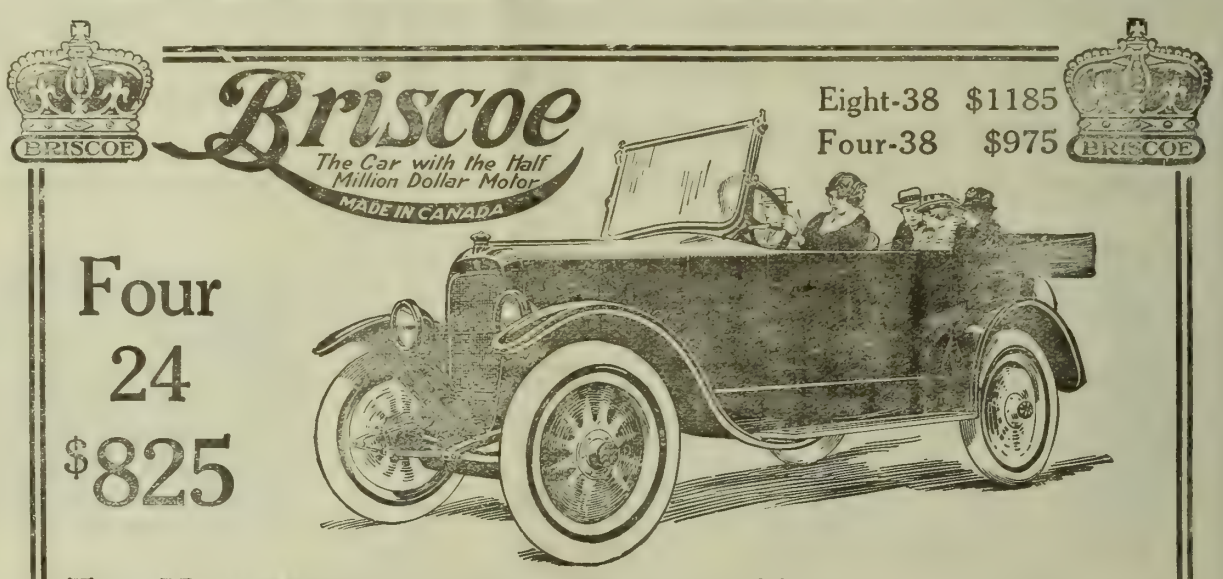
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ALLIED VICTORIES REACT ON BELGIUM

Brussels.—The gradual tautening of the Allied cordons around the German lines on the western battle front is making the desperation of the Teutonic forces felt in more ways than one. While internal conditions are assuming serious proportions in Germany the situation in Brussels and other Belgian centres under German control is even worse.

It is worse because the German occupants are bleeding the helpless Belgian people in order to exact every possible benefit for themselves. Regard for humane methods, which was lax enough before, has now been cast to the four winds, and pressure is brought to bear on men, woman, and children—the aged, decrepit, the weak, and the strong to further the German cause.

The conditions resulting from this can hardly be imagined. Where bitter hunger and want existed before, starvation is now all that confronts the people. Millions who are anxious to help themselves and the Allies can do neither. They are powerless against this oppression, and their suffering is such as has never been known before in recent civilization.

The imposing of a fine of five million marks on Brussels recently because of the observance of the anniversary of Belgian freedom is but another instance of the weak excuses of the invaders to extract what is possible from the blighted country and her heroic people. The money means little perhaps to Belgium if it were money alone, but when money is not forthcoming the equivalent is taken. Food above all is the one thing most wanted, and is the one thing, unfortunately for Gelgium, most wanted by the Germans. Local products are seized without regard for the pitiful wails of little children and the frantic cries of their parents, who see their sole sustenance being taken from them.

There is but one source of relief for these people—that afforded by the Belgian Relief Commission. Were it not for this organization Belgium would have long ago succumbed to the attacks of robbery, rapine, and destruction made by the Germans. They cannot, and dare not, touch this source of relief, and on it alone Belgium depends for her existence, scant as it is.

Word has been received here from the offices of the Belgian Relief Commission, 59 St. Peter Street, Montreal, that renewed efforts are to be made to send assistance. Canada's harvest this year is report to be a record-breaker, and of it the Dominion will give the one thing most needed, wheat. Money is being raised all over Canada to be spent in Canada to buy this wheat, so while the committee is saving millions from death by starvation it is at the same time spending all its money within the Dominion—a plan which works beneficially both ways.

The administration of Belgian Relief has been reduced to such a point that $2.50 will now keep a Belgian family a month, in spite of high prices obtaining elsewhere in the war zone. An effort is being made to get Canadians to agree to keep one family by giving this amount in regular monthly installments.

The Belgian Relief Committee, 59 St. Peter Street, Montreal, a central organization which operates with no expenses, is now receiving these donations from those Canadians who are willing to assist this humane and patriotic work. Subscriptions should be sent through local committee or district.

DEMAND MAY EXCEED OUTPUT

At no time in the history of the motor car business has the demand for motor cars been so phenomenal as during the present year. Manufacturers have had tremendous difficulties in getting out sufficient cars to take care of this demand, and many factories have been running night and day to keep pace with this demand.

For the greater part of this year the big plant of the Ford Motor Company of Canada, Limited, at Ford, Ontario, has been working twenty hours a day to keep its production equal to the demand. Ford cars to the number of 32,646 were shipped from the factory from August 1, 1915, to July 31, 1916, inclusive; and over two-thirds of this number are now in use in Canada, while the balance were shipped overseas, British possessions—Australia, New Zealand, Africa, and India—getting the bulk of the overseas shipments.

For the 1917 season it is planned to manufacture over 50,000 Ford cars, and new equipment is being installed and additions to the plant are under way now to handle this enormous output.

Many other motor car manufacturers have during the year advanced their prices; but, in keeping with their policy of giving the public the advantage of every economy of production, the Ford Motor Company made a material reduction in prices.

These reduced prices, which went into effect on August 1st, will undoubtedly stimulate the demand for Fords. When a real motor car can be purchased for less than five hundred dollars it begins to look as though walking was a needless waste of time and energy. Truly the Ford is the car of the multitude, and it is doubtful whether the Ford Motor Company will be able to turn out enough cars this year to satisfy al lthe would-be purchasers.

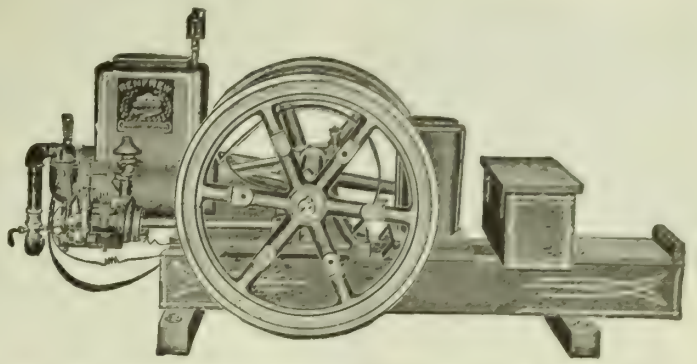
PRESERVATIVE TREATMENT OF FENCE POSTS

The supply of durable woods for fence posts is rapidly decreasing, necessitating the use of other woods that are less suitable. Fortunately western Canada has a fairly abundant supply of such woods as jack pine, spruce, willow, and poplar, which can be used for the purpose. The economical use of these woods, however, demands that some preservative be used to prevent the rapid decay of the portion of the post which is underground. The cost of treating entails some expense, but the outlay is small compared with the cost of new posts and the additional labor of installing them. Woods of the class mentioned above decay in a very short time if placed in the ground untreated, especially if they have not

Renfrew Standard

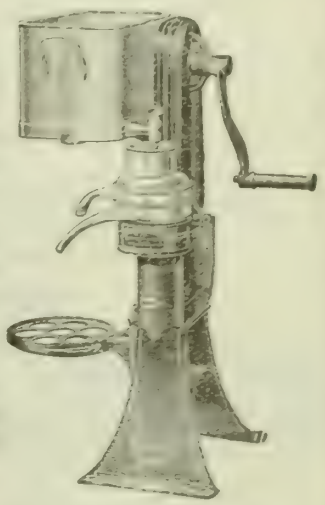
Guaranteed Quality

The Renfrew Standard gasoline engine is fully guaranteed by us. You run no chance in buying anything that we stand behind. We know that the quality of every piece of material in this engine is the very best, and you will find that the engine is built to meet Canadian conditions. It has dual ignition, steam engine type governor, very economical carburetor and other high grade features. Get our engine catalog.



We also have a full line of ensilage cutters, grain grinders, saw frames, etc.

The Standard Cream Separator is built right here in Canada at our big, modern factory in Renfrew, Ontario. If you should happen to need a new part at any time you can get one quickly. No customs hold ups or other delays to keep you waiting.

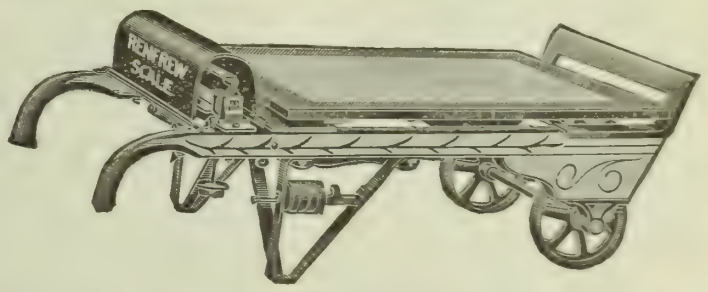


This "Made in Canada" machine is unsurpassed for close skimming. See the Government Dairy School reports. That's all we ask.

It is also self-oiling, easily turned, rapidly cleaned, and built to last. Get our separator catalog and read all about it.

The Renfrew Truck Scale

should be on every farm to weigh anything from one pound to two thousand. Government inspected for accuracy. Self adjusting —you can weigh on uneven ground. Wheels around like a truck. Strongly built. Guaranteed. Write for scale booklet.

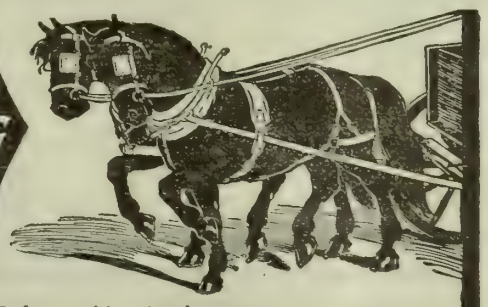


The Renfrew Machinery Co., Limited,

HEAD OFFICE AND WORKS: RENFREW, ONT.

Agencies almost everywhere in Canada

KEEP YOUR HORSES IN PRIME WORKING CONDITION

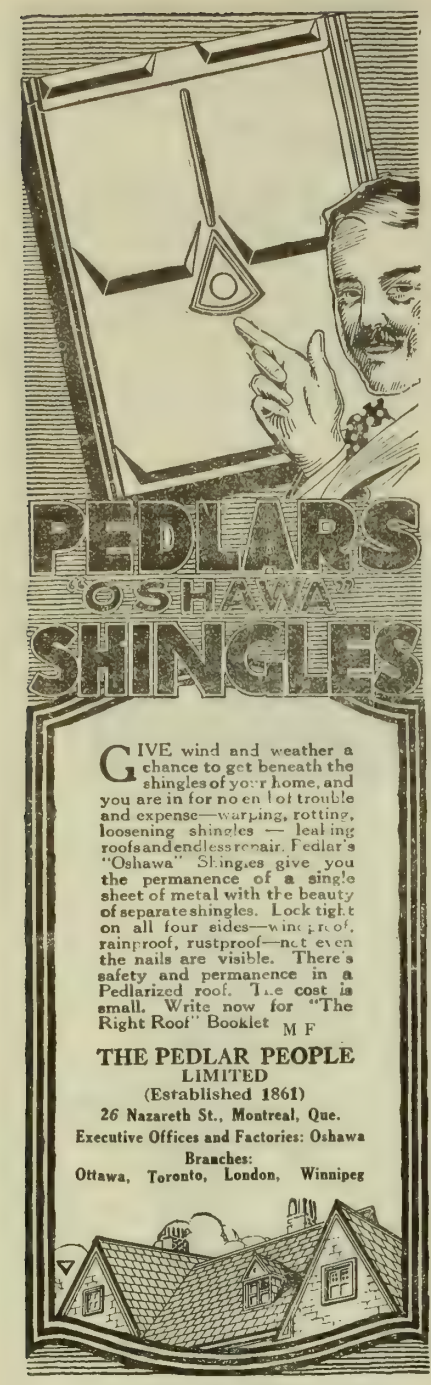


SOUND legs pull big loads. No horse with a Spavin, Splint, Curb, Ringbone, Bony Growth or Sprain, can do itself justice. Thousands of horsemen have been keeping their horses sound by using Kendall's Spavin Cure—the old reliable, safe remedy. Mr. Maurice Wayville, Amherstburg, Ont., wrote on April 20th last—"I cured a jack spavin with two bottles of your Spavin Cure. I am just taking off a bog spavin. It is the best liniment for sprains you can get for man or beast. I would like to have a copy of your "Treatise on the Horse".

KENDALL'S SPAVIN CURE

acts quickly, leaves no scars or blemishes, and costs little—$1. a bottle—6 for $5. Get our valuable book—"Treatise on the horse"—free at your druggist's, or write us 111

Dr. B. J. KENDALL CO., ENOSBURG FALLS, VERMONT, U.S.A.



GIVE wind and weather a chance to get beneath the shingles of your home, and you are in for no end of trouble and expense—warping, rotting, loosening shingles — leaking roofs and endless repair. Pedlar's "Oshawa" Shingles give you the permanence of a single sheet of metal with the beauty of separate shingles. Lock tight on all four sides—wind proof, rainproof, rustproof—not even the nails are visible. There's safety and permanence in a Pedlarized roof. The cost is small. Write now for "The Right Roof" Booklet M F

THE PEDLAR PEOPLE
LIMITED
(Established 1861)
26 Nazareth St., Montreal, Que.
Executive Offices and Factories: Oshawa
Branches:
Ottawa, Toronto, London, Winnipeg

DATES TO REMEMBER

CHARLOTTE COUNTY EXHIBITION
St. Stephen, N. B.
September 12, 13, 14, and 15, 1916

HALIFAX EXHIBITION
Halifax, N. S.
September 13 to 21, 1916

CHARLOTTETOWN EXHIBITION
Charlottetown, P. E. I.
September 26-29, 1916

YARMOUTH COUNTY EXHIBITION
Yarmouth, N. S.
October 4, 5, and 6, 1916

SYDNEY EXHIBITION
Sydney, N. S.
October 3-6, 1916

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Will reduce **Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises.** Stops the **lameness** and **pain** from a **Splint, Side Bone** or **Bone Spavin.** No blister, no hair gone. Horse can be used. $2 a bottle delivered. Describe your case for special instructions and **Book 2 K Free.**

ABSORBINE, JR., the antiseptic liniment for mankind. Reduces **Strained, Torn Ligaments, Enlarged Glands, Veins or Muscles, Heals Cuts, Sores, Ulcers. Allays pain.** Price $1.00 a bottle at dealers or delivered. Book "Evidence" free
W. F. YOUNG, P.D.F., 124 Lymans Bldg., Montreal, Can.
Absorbine and Absorbine, Jr., are made in Canada.

been properly seasoned and set with the bark still on.

The posts should be cut, if possible, as soon as the buds begin to swell in the spring, as the bark can most easily be removed at that time. Posts should be carefully peeled and special care taken to remove the inner bark, as this, if left, prevents the absorption of the preservative. The posts should then be piled so as to allow a free circulation of air. A good plan is to place them in alternate tiers of three and seven posts with about fifty in a pile, with the piles located about ten feet apart. Posts handled in this way will be ready for treatment in the fall.

The object of the treatment is to prevent the growth of fungi or the action of insects which would otherwise cause decay. Creosote or some similar preparation of a coal-tar nature makes the best preservative. It is a heavy oil, insoluble in water, and acts as a chemical poison to fungi or insects. The advantage in using an insoluble mixture lies in the fact that when it comes in contact with moisture it does not dissolve and leach out. Creosote is a by-product in the manufacture of coal oil, and can be secured at most points.

The simplest and least expensive method is to apply the creosote with a brush, but such is not entirely satisfactory, as the oil does not penetrate far enough into the post. Three coats of boiling oil should be applied at intervals to the butts of the posts, so that each coat will dry before another is put on. After treating, stand the posts end up, so that any surface oil will run down the posts.

A more satisfactory method is to put the posts in a barrel and pour in creosote until the oil fills the top pipe. Then light a fire under the bottom pipe and keep it going until no more bubbles are seen to rise to the surface oil. Do not allow the temperature of the creosote to rise above 220 degrees, or the loss from evaporation will be too great. After heating, allow the posts to stand in the mixture for two to four hours, so that the oil will penertate, or the posts can be removed from the heated oil and immersed in a tank of cold oil. This latter plan is desirable for such woods as poplar, willow, or maple, which require treatment to preserve the tops.

If a large number of posts are to be treated a larger tank can be made of galvanized iron and the fire put directly under it

RESULTS OF THE GREAT UMC CARTDRIGE "DRIVE" AGAINST THE GOPHER

Windsor, Ont., Aug. 14.—The results of the Grand Remington UMC Gopher Shooting Contest, inaugurated in the Prairie Provinces in May last and continuing until July 10th, with the cooperation of the hardware dealers, are now announced. Among the hundreds of contestants the name of Mr. Colon Le Page shines out as the supreme winner and no little benefactor to his country. Mr. Le Page shot 2,879 gophers with Remington UMC .22 ammunition, and this is a remarkable score considering the short term of the contest. Mr. Le Page not only captures the first prize offered in the local contest held under the auspieces of Mr. George McIntosh, hardware dealer, of Vonda, Sask., but he also wins the Grand Western Champion Shot Prize of a 12-Gauge Pump Gun donated by the Remington Arm Metallic Cartridge Company, of Windsor, Ontario.

The second largest score of the contest is announced to be Mr. J. R. Moon, of Didsbury, Alta., with a score of 2,805 dead gophers; and the third largest winner was Mr. Harold Brackette, of Medicine Hat, Alta., with a score of 2,087.

In all, it is believed that over 300,000 gophers met their doom in this grand "drive," and the hardware dealers and young people o fthe west who took part in the contest are to be congratulated on this notable decrease in the numbers of their country's most insidious enemy.

Send for new "Money Saver" Booklet

Barrett *Made in Canada*

Money Savers for Farmers

IF you want steady, sure profits, watch the little leaks in your purse. A stitch in time saves nine. Many a sturdy fence has to come down for want of preservative at the right time. Many a house has to be replastered because that little leak in the roof grew big. Many an order goes to manufacturers of farm implements because the older implements weren't painted. And so it goes. A little expenditure here, a little one there, until you are surprised at the sum on the debit side of your ledger.

Now look at the articles in this advertisement. Then ask yourself if you haven't lost money in the past for lack of just such things. We are appealing to the common every-day horse sense of the Canadian Farmer. And he's famous for just that quality.

Carbonol—When a product gives you the best possible aid in a hundred different ways, can you afford to be without it? Carbonol does this. It is a disinfectant of the highest grade. When you clean house, add Carbonol to the water. It removes grease marks, kills germs and banishes odors. If you cut yourself, you can heal the wound and prevent blood poisoning by using Carbonol. And sores that injure horses or cattle are easily cured with it. If the garbage pail draws flies, sprinkle it with Carbonol. It is the best thing you could use in the sick room to prevent contagion. There isn't anything like Carbonol for farm and home use. Get some today.

Everlastic Roofing—In Everlastic Roofing we offer a thoroughly reliable "rubber roofing" at very low cost. It is easily laid without skilled labor and is famous for its wearing qualities. Wherever you have steep roofs, use Everlastic and do away with leaks. Water, wind and weather are defied by this roofing. The best value you ever saw.

Elastigum—Little repairs can easily run into money unless you have something like Elastigum on hand. A tough, adhesive, elastic and waterproof cement that will save you money and worry in a hundred different places. To reline or join gutters, use Elastigum. To seal leaks of any kind, use Elastigum. To stuff cornices or renew chimney flashings, use Elastigum. You will find it makes repairs not only cheap but easy and permanent.

Barrett's Grade One Liquid **Creosote Oil** — Grade-One Creosote Oil is the most effective wood preservative on the market because it penetrates more deeply than any other. And it's practical for you because you can apply it by the dipping or brushing method instead of the difficult and expensive closed-cylinder method. Grade-One Creosote Oil will make an ordinarily good fence post last 20 years. Use it on all your exposed woodwork. It makes exposed surfaces rot-proof and moisture-proof.

Amatite Roofing—Amatite Roofing is distinctive for two reasons—its bright, attractive, sparkling appearance and its great durability. It has wide fame, too, as the roofing that needs no painting. Its mineral surface is waterproof and fire-resisting. Amatite is made in rolls, each roll containing enough to cover 100 square feet with a 3 inch lap.

Everjet—Black as Egypt and much more useful to you—that's Everjet Elastic Paint. This glossy, permanent, elastic paint is a triumph. Indispensable as a roof paint and covering for exposed surfaces. Make your roofs permanently weather-proof and waterproof with Everjet. It's a wonder. It clings to metal surfaces regardless of temperature. It never peels or chips. Positively insures against rust.

Creonoid—The first step toward having healthy, profitable live stock is to keep them free of vermin, lice or flies. Creonoid, Lice Destroyer and Cow Spray, will do this better and more surely than any other animal antiseptic. Just spray your cattle lightly with Creonoid and watch the difference. No flies or mites will bother them. Put some in the cracks and corners of the hennery woodwork. No more mites to make nervous, poor laying hens. Try it in the piggery.

Sold by good dealers everywhere. Send for new "Money Saver" Booklet.

Address our nearest office.

THE PATERSON MANUFACTURING COMPANY, LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE-PATERSON MANUFACTURING CO., LIMITED
ST. JOHN, N. B. HALIFAX, N. S. SYDNEY, N. S.

NO ROYAL ROAD

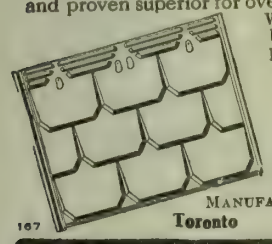
We are told that there is "no Royal Road to Success," and most of us have at some time or another proved it be true. We have found that it is only by steady, persistent effort that anything worth while is attained. Yet if the above is a truth it is also a fact that success does come to those who earnestly strive for it along the right lines. A case in point is that of "King Cole Tea," whose advertisement is seen from time to time in our pages. Starting some six years ago in the face of the sternest competition and adverse market conditions, this tea, by makin "quality first" its watchword,

Build to last

BEFORE you build or repair your barn or house, let us show you **how much money we can save you.** Here are the "Metallic" fireproof, stormproof and timeproof specialties.

"Eastlake" Galvanized Shingles.
"Empire" Corrugated Iron.
"Metallic" Ceiling and Wall Plates, (for inside use.)
"Metallic" Brick and Rock Face and Clapboard Sidings.
"Acheson" Roof Lights.
"Halitus" Ventilators.
"Empire" Silo Roofs, etc.

We guarantee the best for your money. Our goods have been tried and proven superior for over 30 years.



Write us for booklets and prices today. A post card will do.

Address
Metallic Roofing Co. Limited
MANUFACTURERS
Toronto Winnipeg

167

"Metallic"

has made solid progress from year to year, until today. it stands recognized by grocers and the public generally as one of the very highest class brands of tea in Canada.

It is four years since the G. E. Barbour Company, the blenders and packers of "King Cole," commenced to issue with each package the now well known guarantee of "Money back if not satisfactory." This was done to convince the public of the genuineness of the character of King Cole Tea and to provide redress for any possible disappointment. The fact that not a single paskage has been returned in that time leaves no doubt in one's mind as to the high quality of "King Cole" and the careful way in which that quality is maintained.

The company gladly pays tribute to the newspapers as a medium for making the merits of their tea known to the public, and we are glad to feel that we have in a measure contributed to "King Cole's" success.

The slogan of King Cole Tea is: "You'll like the flavor."

SOOT FOR SCOURS

For the benefit of those who have trouble with white scours in calves, I will give a treatment which we have used in a number of serious cases of white scours with excellent results:

Give the calf about six tablespoonfuls of castor oil. From eight to ten hours after giving the oil, remove a length of stovepipe from the stove and take some of the dry, crusty soot from the inside of the pipe and give the calf two heaping tablespoonfuls of it. Each spoonful of soot should be placed well back on the tongue and followed with a little milk or water to aid in swallowing it.

The scours will generally disappear inside of 24 hours. I wish some one would try this treatment and let me know what results they have.—A. S., in Agriculturist.

GOOD ROADS DAY AT THE HALIFAX EXHIBITION

"Good roads for Nova Scotia!" will be the slogan on Friday, September 15th, at the Provincial Exhibition at Halifax. Every one interested in this important matter is urged to make it a point to be in the city on that particular day.

A business meeting will be held in the Board of Trade rooms at 10 o'clock in the morning for the purpose of effecting the organization of a Provincial Good Roads Association.

Moving pictures on the subject will be shown at the exhibition in the afternoon and it is probable that something of interest will be arranged for the evening.

Remember the day—Friday, September 15th.

SOLDERING IRONS

For general purposes a 1¼-pound soldering iron will be found satisfactory. Where continuous work is to be performed two irons are necessary in order that one may be heating while the other is in use. Soldering irons should be heated only in a clear charcoal fire or in a blue flame of gas, gasoline, or alcohol. Before using a soldering iron it is essential that the tapering copper point be filed or ground until bright, and then coated with solder by first dipping the brightened hot point into a little of the soldering acid and afterward rubbing over the solder. This process is known as "tinning" the iron, and is necessary in order to make the solder adhere to the copper and spread evenly. The iron must be re-tinned as often as the coating burns off. Soldering irons are sold by the pound, the price depending upon the market price of copper.

WASTE OF WEEDS

According to the United States Department of Agriculture, the annual waste due to weeds is estimated at $300,000,000 for the whole United States. In certain states where diversified farming is the exception and not the rule, the waste is said to approximate $40,000,000 per year. What the waste is in Colorado cannot be accurately estimated, but it is undoubtedly true that considerable waste occurs. In the intensively cultivated sections the waste is not very large because of the clean culture needed for certain crops. In sections where grain crops are very popular the waste is quite large.

The principal ways in which weeds affect farming are through direct damage to the crop, cutting down the yield, cheapening the product, and lowering the value of land.

SUBSTITUTE FOR PIPE WRENCH

It frequently happens that a pipe wrench is needed to turn a pipe and none is handy A fair substitute is to break off a short piece of an old file and use it on the jaw of a flat wrench. The file will grip the pipe, preventing the wrench from slipping. Of course, this is not equal to a good pipe wrench, but may serve to tighten or loosen a pipe or bolt when nothing else at hand will serve to do the trick.

TRAPPERS! Send your RAW FURS to JOHN HALLAM

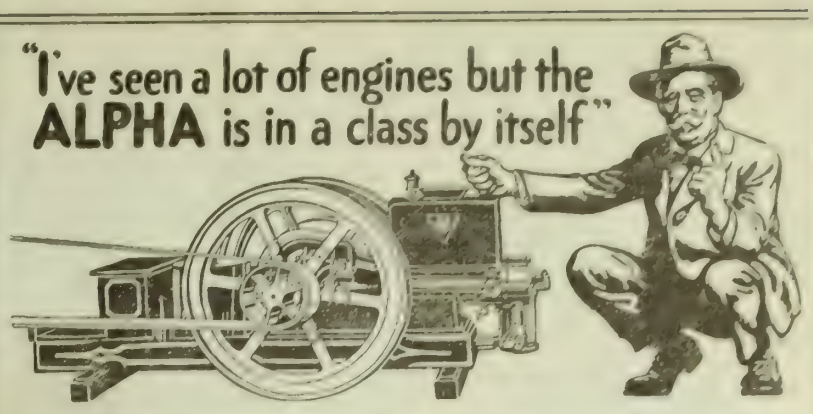
and receive highest cash prices. We send money the same day the furs are received. Charge no commissions—and pay all charges. We have paid out millions of dollars to thousands of trappers in Canada who send their furs to us because they know they get a square deal, and receive more money for their furs. You will also. We buy more furs from trappers for cash than any other five firms in Canada.

FREE
Hallam's Trapper Guide (96 pages)
Hallam's Sportsmen's Catalogue
Hallam's Raw Fur Quotations
Hallam's Fur Style Book (32 pages)

Sent free on request . Address as follows:

JOHN HALLAM Limited
142 Hallam Building, Toronto

"I've seen a lot of engines but the ALPHA is in a class by itself"



THE more a man knows about gas engines the stronger is his recommendation of the Alpha. Users of the Alpha who have had lots of engine experience will tell you that the Alpha gives them the most power for the fuel consumed, is the least troublesome to keep in good working order, costs the least for repairs, and that they can always rely on it to give them plenty of steady power when needed.

The fact that the Alpha is not affected by cold weather is one of its good points that is especially appreciated by Canadian users. The speed and fuel consumption of the Alpha are accurately regulated to all loads by the quickest acting and most sensitive governor ever used on a gas engine. There is no waste of fuel and the engine runs steadily under all loads—light, heavy or varying.

The Alpha has no troublesome batteries. It starts and operates on a simple low speed magneto. The entire ignition system is remarkably simple and assures you of a hot, fat spark at all times. You can use either gasoline or kerosene for fuel.

The strong recommendation the Alpha gets from its users is the result of features that you can readily appreciate when you see the engine or the illustrations and descriptions in our large catalogue. Send for a copy of this catalogue at once. Read it carefully and you will agree with Alpha users that this engine is in a class by itself, and gives you the most for your money.

Alpha Engines are made in eleven sizes—2 to 28 H.P. Each furnished in stationary, semi-portable, or portable style, with hopper or tank cooled cylinder.

DE LAVAL DAIRY SUPPLY CO., Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole distributors in Canada of the famous De Laval Cream Separators. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

True co-operation is not a get-rich-quick scheme. It is plain common sense and means doing business in the simplest, safest and most economical way. Its success is due to the practical application of modern business principles that will insure the success of any undertaking—whether it be a billion dollar trust or a cooperative grocery store.—The Cooperator.

It is estimated that egg production alone in Canada for 1915 was $30,000,000. This is two and a half times the value of the whole fruit crop of Canada, six times the value of all the sheep, and half the value of all the cattle produced.

SISTER: READ MY FREE OFFER.

I am a woman.
I know a woman's trials.
I know her need of sympathy and [illegible]
If you, my sister, are [illegible] ill-health, and feel unfit for household duties social pleasures, or daily [illegible] just how you suffer and [illegible] trial of a **home tre tment** suited to your needs; with references to Canadian ladies who gladly tell how they have [illegible] happiness by its use. [illegible] this successful method of home treatment for yourself, my reader, [illegible] or your mother. I want to tell you how to cure yourselves at home at trifling cost, and without aid from anyone. Men **cannot** understand a woman's sufferings; what we women know **from experience,** we know better than any doctor; and thousands have proved there is hope **for the hopeless** in my method. If you suffer from **pain in the head, back, bowels, feeling of weight** and dragging down sensations, **falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating or unnatural enlargements, catarrhal conditions, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you** to send to-day for my complete **ten days' treatment** entirely **free and postpaid,** to prove to yourself that these ailments [illegible] home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and **when you are cured,** my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—**young or old.** To **Mothers** of **Daughters,** I will explain a simple home treatment which speedily and effectually cures [illegible] (chlorosis), irregularities, headaches, and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember **it costs you nothing** to give my method of home treatment a complete ten day's trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. **Is health worth asking for?** Then accept my generous offer, **write for the free treatment** suited to your needs, and I will send it in plain wrapper by **return mail.** To save time you can cut out this offer, mark the places that tell your feelings, and return to me. **Write and ask** for the **free treatment to-day,** as you may not see this offer again. Address:

MRS M. SUMMERS - - BOX 309 WINDSOR ONTARIO

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $1.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Jersey Cattle

F. W. Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

Jos. R. Taylor, Upper Dorcheste , N. B.
James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Oattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co. N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C A. Archibald, Truro, N. S.

Yorkshires.

R. J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
A. A. H. Margison, East Centreville, Carleton Co., N. B.

White Wyandottes

R. J. Messenger, Lawrencetown, N. S.

BEES! BEES!

We offer for sale several colonies of Bees in first-class condition and warranted free from disease.

CRAIG BROS.
Amherst Nova Scotia

FOR SALE.

Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

BLISS ANDERSON & SON,
Sackville, - - N. B.

BEE-KEEPERS SUPPLIES

Bee Hives, Sections, Weed Process Foundation. Instruction books and everything needed by bee-keepers. Northern Grown Nursery Stock. Lowest prices, Satisfaction guaranteed. Write for price lists.
E. L. Colpitts, Petitcodiac, N.B.

BARGAINS !

Buff Wyandotte Cock and Hen, nice ones, $3.00 per pair.
White Wyandotte Cock, 4 Hens and 2 Pullets, $6.00.
White Leghorn Cockerel and 5 Hens, $5.00.
Also choice lot of White Leghorn Cockerels, $1.00 each, if taken at once.
Jersey Heifer Calf, 5 months.

ORCHARD HILL FARM
Brown's Flats, N. B.

SALE OF POULTRY

to make room for young stock all our Buff Orpingtons and Silver Spangled Hamburgs will be delivered after Halifax Exhibition.

SEAMAN & STEWART,
Box 325. Moncton, N. B.

One Cent a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 1 cent a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is one cent a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE.—Two good pure bred Cheviot Ram Lambs from impo ted sire. Write for prices.—WILSON GILLIS, George's River, C. B.

WOULD YOU MARRY IF SUITED?—Best matrimonial paper published. Mailed FREE.—THE CORRESPONDENT. Toledo, Ohio.

FOR SALE.—Two York Boar Pigs, registered stock, one a year old, the other 6 months old, or will exchange one of them for York Sow.—A E. FERGUSON, Gowan Brae Farm. West Bathurst.

FOR SALE.—Pure bred Jersey Bull, 3 months old, whose dam made 59.7 lbs. butter in June test. Write for prices.—KENNETH EMBLETON, Harvey Station, York Co , N. B.

FOR SALE.—Pure bred Collie Puppies, sire and dam first prize winners at St. John Dog Show last fall, extra fine stock, in perfect condition.—GEO. W. AIKEN, P. O. Box 775, Fredericton, N. B.

LADIES TO DO PLAIN AND LIGHT SEWING at home, whole or spare time; good pay; work sent any distance, charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

STRAWBERRY PLANTS

For the Spring of 1917 we are listing the following varieties:

Senator Dunlap, Sample, Warfield, Wm. Belt, Arnout, Valeria, Desdemona, Ophelia, Portia, Glen Mary, Buster, Haverland, Kellogg's Prize, Paul Jones, Progressive, Superb.

Our new Catalogue and Price List will be ready about the first of the year, and will be sent free to all our old friends and any new ones that are interested in berry growing. The new fall bearer, Progressive, is a great addition to the strawberry world. Be sure and include them in your order for 1917.

CYRUS & MANNING ELLS
Port Williams, N. S.

SHEEP !

We have thirty head of Breeding Leicester and Cotswold ewes for sale at present. Apply at once.

Eastern Karakule Sheep Co.
Limited
WINDSOR, N. S.

Shorthorn Cattle !

We have for sale five pure bred Bulls, ages from 12 to 18 months Also some Heifers from one to three years old. Write us for particulars.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

Jersey Bull for Sale !

A fine Jersey Bull, well grown, of excellent breeding, will be sold very reasonable. 15 months old.

SARAH E. MOSES SMITH,
Woodward's Cove, N. B.

Clydesdale Stallion for Sale

To avoid inbreeding we wish to sell our Clydesdale Stallion, Baron Majestic No. 10728, champion at the Maritime Horse Show in 1911 as a three year old. Baron Majestic is by Baron Primrose and he by Baron's Pride. Baron Majestic is now 8 years old, dark bay with white points, perfectly sound, a free trappy walker, gentle worker and a prepotent, sure foal getter. For further particulars write

H. A. MOFFATT & SON, Groves Point, N. S.

IF YOU HAVE LIVE STOCK FOR SALE ADVERTISE IN THE MARI-

Furnace Time is Getting Nearer Every Day !

The time to make INSTALLATIONS is here, and it's wise not to postpone such events. You'll find it advantageous to use a furnace MADE IN FREDERICTON.

The Smith Foundry Co., Ltd.,
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Under the Control of the Department of Agriculture of Ontario.

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College will reopen on

MONDAY, OCTOBER 2nd, 1916

Calendar on Application.

E. A. A. GRANGE, V. S., M. S., Principal

R. O.M. and R. O. P. Holsteins

Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

2 Daughters of "Black Rose Beauty" whose record is 522 lbs. milk, 24.60 lbs butter in 7 days.

2 Daughters of Miss Rooker Posch, whose record is 402 lbs. milk, 16.114 lbs. butter in 7 days; 12,268 lbs. milk, 600 lbs. butter in one year, when 3 years old.

2 Daughters of Beauty Rooker, whose record at 2 years of age is 322 lbs. milk, 15½ lbs. butter in 7 days; 11,248 lbs. milk, 517 lbs. butter in one year.

And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

LEA & CLARK, Victoria, P. E.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S

Elmwood Stock Farm Offers for Sale :

Two cho ce young Holstein Bulls, 15 and 16 months old, sired by Dutchland Pietertje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad (the world's greatest bull), 101 A. R. O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

New Brunswick Grown Apple Trees

at

Lowest Prices consistent with quality

Agents wanted in every district

ALBERT NURSERIES, Albert, N.B.

Money-Making Farms

8 cows, pair horses, 6 acres corn, ½ acre potatoes, large garden, hay, calf, pigs, hens, 2 heifers, long list tools, wagons and machinery, including cream separator, gasoline engine, cider mill, saw, belts, pulleys, etc., with piano and a lot of furniture all thrown in with this 100-acre productive farm; cutting 40 tons hay, 15-cow pasture, several hundred cords hardwood and 12 acres pine; 100 apple trees, pears, peaches, plums and grapes. Two-story 9-room house with fine cellar, 72-ft. basement barn, all in good repair with running spring water. High elevation, remarkable views, near neighbors, ¼ mile to school and only 3 miles to large village and depot; mail delivered, cream collected at door. Advanced age of owner forces early sale. $3450 takes all. A 145-acre farm with crops, stock and tools for $2470 shown same trip. For travelling instructions see page 7. "Strout's Big Bunch of Bargains," copy free. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston.

Advertise in The Maritime Farmer.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 21. SUSSEX, NEW BRUNSWICK, SEPTEMBER 26, 1916. Number 24.

THE HALIFAX EXHIBITION

The big Nova Scotia Provincial Exhibition opened its doors to the public on Wednesday, September 13th, and from then until they were finally closed on Thursday, September 21st, the weather man was most kind. An abundance of sunny, balmy weather of just the right temperature to make everybody get out to see everybody else and everything was responsible for the large attendance. The fair had been well advertised by the management; they promised the public a show bigger and better than ever, and in this the public was not deceived.

Visitors who had on previous occasions visited the fair could not fail to notice the changes for the better in many of the departments. The fisheries exhibit, which was very small, and the showing in the horse classes, which in point of numbers was not nearly up to that of last year's exhibition, were considered by all who are conversant with the previous Halifax fairs to have been the weak spots this year.

Hon. E. H. Armstrong, the President of the Exhibition Commission; M. McF. Hall, the Secretary, and the other gentlemen who compose the commission as well as the superintendents and their assistants in the various departments were untiring in their efforts to make matters run as smoothly as possible for the exhibitors and the throngs of visitors.

Despite the fact that the midway was more extensive than ever and ample opportunity afforded for all who felt inclined to enjoy themselves along the lighter lines, an increased interest in the educational features of the fair was very noticeable. It was most gratifying to the superintendents of the cattle, sheep, swine, horse, poultry, fruit, flowers, agricultural products, dairy, women's institutes, mines, women's work, arts, and manufactories to note the throngs of visitors who came to their respective departments not merely to pass through, but who lingered long to examine minutely each and every exhibit. Never have we seen such interest evidenced in the live-stock departments as we noticed this year. While the various classes were being judged interested persons watched the placings, and as we moved around among the various groups we heard many interesting discussions on the types represented in the various sections of each class.

THE MAIN BUILDING

was well filled with the exhibits of manufacturers and dealers in a wide range of articles. Exhibits from the public schools, Rural Science Schools, the Nova Scotia Technical College, and models of good roads shown by the Department of Public Works of Nova Scotia occupied the gallery, while the annex was filled to overflowing with automobile exhibits.

THE FINE ARTS AND WOMEN'S BUILDING

contained some very handsome and valuable paintings, drawings, and beautiful specimens of work in women's handicrafts, all of which were admired by thousands of sight-seers.

THE MINES BUILDING

better than ever before represented the mineral wealth of Nova Scotia. It contained exhibits from the various coal mines, the Dominion Iron and Steel, the Nova Scotia Steel and Coal Company and a wide range of the iron and other economic ores so abundantly found in the province.

One of the most interesting features displayed in the Mines Building was the display of war munitions in their respective stages of manufacture.

THE WOMEN'S INSTITUTE DEPARTMENT

had a splendid display in the former Fishery Building, and received a great deal of attention from the general public. Miss Jennnie Fraser the popular and energetic supervisor of Women's Institutes for the province, was in charge, and with her as a booster for the work was Miss Agnes McGuire, of Lunenburg. The display of home-made mats, carpets, spreads, quilts, tablecloths, towels, etc., which were nearly all made by the industrious women of Lunenburg County was an eye-opener to many in whose home districts this line of home craft is practically a lost art.

Both Miss Fraser and Miss McGuire are deeply impressed with the possibilities for the development of industries of this kind in the home, and both are of the opinion that on the ability of the farmer's wife and children to use their spare time in the manufacture of articles that bring a ready sale at fairly remunerative figures for time and material hinges, to a great extent, the success of the back-to-the-land movement.

The various implements used in the home manufacture of woolen and linen goods from the sheep's wool and from flax were shown and in operation during the fair. The spinning wheel, the distaff, the loom, and other implements recalled to many minds the scenes of their childhood, when grandmother, mother, wife, or sister plied these arts.

The Women's Institute Department also contained a display of canned fruits and vegetables, and bulletins on how this line of work may be performed in the farm home were there for the asking.

The Horticultural Department of the Nova Scotia College of Agriculture showed a nice display of garden vegetables that should be grown in each and every kitchen garden in Nova Scotia, and while the aims of the Women's Institute—"Patriotic Work," "Home Work," "Red Cross Work," "Charitable Work," "Community Work," and "School Work"—were depicted on the artistic arches surmounting the display, attractive placards posted in conspicuous places throughout the building drew the attention of the public to the following salient facts:

"Work is our reward, our strength, our glory, and our pleasure."

"Do you eat enough vegetables? Do you realize how important they are in the nourishment of the body? If you did, you would grow more and be more healthy."

"Patriotism and Production—Grow vegetables, eat vegetables, practice economy."

"How much nourishment are you wasting when cooking vegetables? Find out the proper method by consulting the bulletin issued by this department."

"Would you like fresh vegetables during winter? Try canning them through the summer and autumn."

"Grow and eat more vegetables."

"On a conservative estimate $200,000 is spent every year in Nova Scotia for canned vegetables. This money goes out of the country. Can your own, and save money."

"The vegetable campaign means Health, Economy, and Industry."

"Are you growing vegetables? If not, try them in that bit of land, and see what you can do. If you desire information consult Prof. Shaw, of the N. S. A. C., Truro."

THE CREAMERY INDUSTRY

was well represented in the former Fishery Building. W. A. MacKay, superintendent of dairying for Nova Scotia, and M. Harvey Mitchell, of the Cow Testing Association Division, had the best instructive display of dairy utensils ever shown at Halifax. There was a neat creamery, where butter making was demonstrated at certain hours, and where the product—butter and buttermilk—was sold to the public. There were up-to-the-minute churns, butter workers, pasteurizers, Babcock testers, acidimeters, butter scales, hydraulic butter printers, refrigerators, rotary pumps, starter cans, bottle washing machines, lactometers, moisture testers, equipment for keeping records, model cream can houses, and other implements of interest to the creamery men and dairymen.

The butter buyers' challenge trophy, which is for annual competition at the Convention of the Dairymen's Association of Nova Scotia, was on exhibition, and much admired. The Brookfield Creamery Co. captured this trophy in 1916.

The progress of the dairy industry in Nova Scotia from 1907 to 1916, which is attributed to co-operation, the creamery, and the cow-testing associations, was well illustrated by a chart containing the following information:

Progress of Creameries in Nova Scotia

Year.	No. of Creameries in Operation.	Pounds of Butter Made.	Value of Butter Made.	% of Increase Over 1907.
1907	7	163,184	$40,896.00	
1908	7	163,147	40,886.00	*
1909	6	183,248	45,812.00	12
1910	10	256,420	76,669.20	63
1911	10	320,763	83,398.38	103
1912	11	470,603	130,076.17	218
1913	14	709,012	194,802.46	376
1914	17	913,273	257,600.00	529
1915	20	1,224,483	366,011.24	797
1916‡ ...	21	1,612,627	475,814.61	1066

* Decrease.
‡ Estimate September 1st.

Photos of the various creameries in Nova Scotia, with a record of the 1915 output, were shown. A cut of these clean-looking creameries will appear in the next issue of **The Maritime Farmer.**

A conspicuous placard asked the creamery man the question: "Are you in line for finest quality butter? Have you started cream grading? If not, why not?" And the creamery patron interested in cream grading was invited to walk into the office and talk it over.

Farmers who keep cows found much to interest them in the records of the following Maritime cows that show a satisfactory margin of profit. These records were shown on placards, and quite in contrast with the production of the average Nova Scotia cow:

Miss La Honda, owned by S. Dickie & Son, Central Onslow, world's champion, in three days' public test with 288.9 lbs. milk and 13.12 lbs. butter.

Hillside Sally, 3 years old, owned by Prescott Blanchard, Truro, 11,000 lbs. milk, testing 3.9 per cent butter fat.

Ardyne Perfection, 11,000 lbs. milk, testing 3.9. Owned by Prescott Blanchard.

Grange Sally, 15,000 lbs. milk, 4.2 per cent butter fat. Owned by Prescott Blanchard.

East Court Merry Maid, with first calf, 8,127 lbs. milk, 421 lbs. butter. Owned by the Nova Scotia Agricultural College.

Flora Rooker Rosch, with first calf, 15,599 lbs. milk. Owned by the Nova Scotia Agricultural College.

Emma of Evergreen 2nd, 16,737.6 lbs. milk, 654.03 lbs. butter. Owned by the N. S. A. C.

Artis Rosie, 16,318.6 lbs. milk, 751.25 lbs. butter. Owned by the N. S. A. C.

Victoria Calamity Clay, 22,835 lbs. milk, 803.41 lbs. butter. Owned by the N. S. A. C.

Jemima Wayne Sarcastic, 14,336.4 lbs. milk, 560.4 lbs. butter. Owned by the N. S. A. C.

Records of this kind may be produced in many Nova Scotia herds if

proper attention is given to feeding, breeding, and weeding. The best guide for the weeding process is to follow the work outlined by the cow-testing associations.

THE BUTTER AND CHEESE

There was a creditable display of dairy products in the cold-storage room adjoining the creamery exhibit. The awards and scores were as follows:

Butter, best tub, box, or firkin, not less than 50 lbs., suitable for export, made at any creamery.

1. Jos. Dansereau, St. Hyacinthe, Que. Score 97.
2. J. R. Sweeney, Margaree Forks, N. S. Score 95.
3. Milburn Creamery Co., Malignant Co., N. S. Score 94.
4. C. M. Johnson, Bedeque, P. E. I. Score 93.5.
5. D. E. McLeod, Sterling's Brook, N. S. Score 93.

Best box, not less than 28 lbs., suitable for export, made at any creamery.

1. C. L. Le Blanc, Meteghan River, N. S. Score 96.
2. J. R. Sweeney. Score 95.
3. Milburn Creamery Co. Score 94.
4. C. M. Johnson. Score 93.5.

Butter, best prints or fancy packages, not less than 50 lbs., made at any creamery.

1. J. R. Sweeney. Score 95.
2. C. M. Johnson. Score 93.5.
3. Scotsburn Creamery, Scotsburn, N. S. Score 92.5.
4. F. E. Porter, Dayton, N. S. Score 92.25.

Butter in granular form, from 3 to 5 lbs. in glass jar, made at any creamery or farm dairy.

1. W. Arthur Tuttle, Pugwash, N. S.
2. F. E. Porter.
3. Mrs. Barrie Fulton, Stewiache.
4. A. Cameron, Loch Katrine, N. S.

Butter, best basket or package of prints, not less than 10 lbs., made at any dairy farm.

1. W. Arthur Tuttle. Score 93.5.
2. F. W. Foster, Kingston, N. S. Score 93.
3. Mrs. Isaac Hoar, Onslow, N. S. Score 92.
4. H. L. Neily, Kingston. Score 91.

Best crock, box, or tub, not less than 20 lbs., made at any dairy farm.

1. W. Arthur Tuttle. 93.5.
2. F. W. Foster. 93.
3. McFarlane Bros. 92.5.
4. Mrs. I. Hoar. 90.5.

Cheese, best 2 packages colored, not less than 50 lbs. each, made at any factory before the 1st of September, 1916.

1. J. A. McManus, Cornwall, P. E. I. 95.
2. Leo Hughes, Emerald, P. E. I. 74.75.
3. Jos. B. McDonald, Arlington, P. E. I. 94.5.
4. J. H. McDonald, Vernon, P. E. I. 94.

THE AGRICULTURAL HALL

held a good display of field and garden vegetables and grain. The prize winners in the seed grain section were as follows:

Field Grains, Seeds, etc.

Wheat, White Winter, A. U.
1. Thos. Aylivard, Falmouth, N. S.
2. William O'Brine & Sons, Windsor, N. S.

Wheat, Red Winter, A. V.
1. William O'Brien & Sons.
2. Thos. Aylward.

Wheat, White Spring, A. V.
1. Bertrand Goodspeed, Peniac, N. B.

Wheat, Red Spring, A. V.
1. McFarlane Bros., Fox Harbour Point, P. E. I.
2. M. B. Harrison, Athol, N. S.
3. Newton Kuhn, Dartmouth, N. S.

Barley, 2-Rowed, A. V.
1. Thos. Aylward.
2. William O'Brien & Sons.
3. E. J. Vessey, Little York, P. E. I.

Barley, 4 or 6 Rowed, A. V.
1. McFarlane Bros.
2. B. F. Chesley, Bridgetown, N. S.
3. E. J. Vessey.

Oats, Long White, A. V.
1. E. J. Vessey.
2. William O'Brien & Sons.
3. McFarlane Bros.
4. George Walker, Middleton, N. S.
5. B. F. Chesley.
6. Allen Bezanson, Hampton, N. S.
7. Newton Kuhn.

Oats, Short White, A. V.
1. Sharp & McNeil, Windsor, N. S.
2. H. E. Bent, Sufferville, N. S.
3. Newton Kuhn.
4. B. F. Chesley.
5. George Walker.
6. Allen Bezanson.
7. McFarlane Bros.

Oats, Black Zartarian.
1. E. J. Vessey.
2. H. E. Bent.

Oats, Black Zartarian, A. O. V.
1. George Walker.
2. E. J. Vessey.
3. Allen Bezanson.

Rye, Winter.
1. William O'Brien & Sons.
2. Thos. Aylward.
3. F. D. Smith, Kingston, N. S.

Buckwheat, Rough.
1. William O'Brien & Sons.
2. Thos. Aylward.
3. George Walker.

Buckwheat, A. O. V.
1. H. E. Bent.
2. Allen Bezanson.
3. William O'Brien & Sons.

Peas, Small White Field.
1. Allen Bezanson.
2. William O'Brien & Sons.
3. Thomas Aylward.

Peas, Large Field.
1. William O'Brien & Sons.
2. Thomas Aylward.
3. Allen Bezanson.

Beans, Small White Field.
1. Allen Bezanson.

Beans, Large White Field.
1. M. B. Harrison.
2. B. F. Chesley.
3. Allen Bezanson.

Beans, Horse.
1. Allen Bezanson.
2. George Walker.

Corn, Indian, on ear, White.
1. Allen Bezanson.

Corn, Indian, on ear, Yellow.
1. Allen Bezanson.

Timothy Seed.
1. William O'Brien & Sons.
2. McFarlane Bros.
3. Thomas Aylward.

Clover, Red.
1. Thomas Aylward.

Hops, 5 lbs.
1. Mrs. C. M. Dickson, Truro.
2. J. E. Bent.

Sheaf of Flax.
1. E. J. Vessey.
2. Allen Bezanson.
3. Newton Kuhn.

Victor Aylward, W. J. Aylward, and Harry Loomer showed the best collections of ensilage corn in their respective order.

Allen Bezanson, B. F. Chesley, and Robert Settle, Sr., had the best collections respectively of field corn.

In garden vegetables, B. F. Chesley, Allen Bezanson, and Harry Loomer showed the best collection.

The Dominion Department of Agriculture had two splendid displays in the Agricultural Hall. One of these was that of the Experimental Farm at Nappan and Horticultural Station at Kentville. Specimens of grains, grasses, fruits, and vegetables were tastily arranged.

Models of barns, sheep houses, feeding racks and troughs, wool packing boxes, dipping tanks, and other instructive labor-saving devices were on exhibition, and we would judge that many of our boys will put in a part of their spare time during the coming winter in putting some of the ideas shown therein into practical use.

Mr. W. W. Baird, Superintendent of the Nappan Farm, was in charge, and was kept busy showing and explaining the various models. He also had some splendid photos of the respective breeds of sheep.

The following placards were closely studied by the visitors:

"Lime produces conditions suitable for the clover plant."

"Clover makes the soil more favorable for vigorous crop growth. We will be pleased to send you publications."

"Four thorough sprayings at the right time—two before blossoms and two after—ensure clean apples."

"Clover enriches the soil and produces suitable soil conditions for plants."

"Shallow, frequent cultivation after the cultivated crops are established conserve moisture and give larger crops."

"Proper rotation of crops will ensure the most profitable results."

"Black peat soil well dried is one of the best absorbents to use in the stable."

"Dispose of all non-producers."

"Absorbents conserve the liquid which contain most of the potash voided by animals."

"Sheep for cleaning roads, eradicating weeds, and consuming cheap fodder mean profit for you."

"Flushing the ewes well on the extra good pastures before the breeding season will mean more and stronger lambs next year."

"Market only the finished lambs. Thin, light, and late lambs can be profitably finished on the farm for Christmas and Easter markets, making from $1.00 to $2.00 greater profit per lamb."

"The three essentials to secure success in live stock are Breeding, Weeding, and Feeding."

Two photos in the centre of the display attracted the attention of many farmers who are confronted with the scarcity of help problem, as well as of those who wish to cut down the cost of production. One showed a farmer plowing with a two-horse team and a single furrow plow—cost of plowing one acre $2.00.

The other photo showed a farmer plowing with a three-horse hitch and a two furrow plow—cost of plowing an acre $1.25.

The foregoing and other farming problems were discussed by Mr. Baird.

THE WOOL EXHIBIT

The other exhibit referred to above was the wool exhibit of the Live Stock Branch, in charge of Mr. McCrimmon and his assistant, Mr. Sexsmith. Messrs. O'Brien and Stetson, of the Sheep Division, were also on hand to boost the sheep industry in the province.

This exhibit consisted of show cases in which were displayed sample fleeces of the representative breed types. Then there was wool in the various stages of manufacture, from the unwashed wool up to the finished worsted products.

Samples of various grades of wool were also shown, as well as of wool properly shorn, rolled, and tied, contrasted with badly cared for fleeces. The comparisons were evident to all concerned, and when one considers that the most money is realized from the grades which are properly handled and cared for, he is foolish indeed who does not do his best to follow the ideals set forth by Messrs. O'Brien and Stetson and the other gentlemen who worked with the wool display.

The whole display tended to show how the best advantages may accrue to both producer and buyer.

THE HORTICULTURAL HALL

contained a considerable display of fruit and flowers. Mr. Geo. H. Vroom placed the awards in the fruit section. The fruit, as might be expected at this early season, was quite green, but the earlier varieties showed up well colored and clean.

Following are the most important awards:

County Collections

Halifax—1, Mrs. Frances Turner, Halifax.

Lunenburg—1, H. F. Hebb, Bridgewater.

Digby—1, W. D. Ryerson, Bear River.

Annapolis—1, H. E. Bent, Tupperville; 2, B. F. Chesley, Bridgewater.

Kings—1, H. D. Johnson, Wolfville; 2, A. B. Graves, Kingston Village.

Hants—1, A. G. Sangster, Falmouth; 2, Cecil Lyon, Falmouth; 3, Thomas Aylward, Falmouth.

Colchester—1, Geo. M. Anderson, West New Anna; 2, Aubrey Byers, West New Anna.

Pictou—1, Thomas C. Latham, Sylvester.

Best County Collection, A. G. Sylvester.

Apples in Boxes—Gravensteins, H. E. Bent; Wealthys, H. E. Bent.

Best and Most Valuable Collection Apples—1, A. G. Sangster; 2, B. F. Chesley; 3, H. E. Bent.

Best Collection 10 Commercial Varieties—1, A. G. Sangster; 2, H. D. Johnson; 3, H. E. Bent.

Best Collection 5 Commercial Varieties—1, H. D. Johnson; 2, B. F. Chesley; 3, H. E. Bent.

Best Collection New Varieties—1, A. G. Sangster; 2, H. E. Bent; 3, Thomas Aylward.

Best Collection Crab Apples—1, A. G. Sangster; 2, Geo. W. Anderson.

Pears

Best 10 Varieties—1, H. E. Bent; 2, B. F. Chesley; 3, A. G. Sampter.

Best 5 Varieties—1, H. E. Bent; 2, A. G. Sangster; 3, B. F. Chesley.

Plums

Best 15 Varieties—1, H. E. Bent; 2, B. F. Chesley.

Best 6 Varieties—1, H. E. Bent; 2, B. F. Chesley.

Grapes

Best Collection—1, A. G. Sangster; 2, B. F. Chesley.

Collection Fruit Preserves—1, Mrs. H. E. Bent; 2, Mrs. F. J. Porter, Wolfville.

Collection of Jellies—1, Mrs. H. E. Bent; 2, Mrs. F. J. Porter; 3, Mrs. G. M. Dickson, Truro.

Collection Pickles—1, Mrs. F. J. Porter.

THE POULTRY BUILDING

was well filled with poultry of all classes. Some of the birds were badly in moult, but otherwise the showing was most creditable. Mr. Seth Jones, Poultry Superintendent for New Brunswick, placed the awards.

The Poultry Division of the Dominion Department of Agriculture had an instructive exhibit illustrating the proper care and handling of eggs from the nest to the consumer's table. An egg candling station was in operation, and the work of the egg circle movement was fully explained.

The awards in the poultry section will be found on other pages of this issue.

THE HORSES

As already stated, the horse show at Halifax was this year inferior to that of other years in point of numbers. Mr. John Boag, of Ontario, judged the heavy horses, and Dr. Reid placed the awards in the light-horse classes.

Standard Breds

There was a good showing of aged Standard Bred Stallions on the track. Hammond Kelly's Major Todd captured the first prize, Blake Bros.' Eddie De Forest came in for second money, and R. A. Backman's Lookout stood up in third position.

In the three-year-old stallion class there were but two entries—T. D. Blaikie's Micmac, by Achille, and J. Edgar Smith's Brenton S., by Achille, placed in the order named.

Blanchard Brenton's Brentwood, by Achille out of a sister to Israel, was the only two-year-old stallion in the class.

Two yearling stallions faced the judge—one by Capt. Aubrey, the other by Achille. The former captured the red ribbon.

In the brood mare with foal section Mr. E. J. McKenna's Kitty Giltner, by

Gazette, and her foal, by Royal Pandect, came in for first money, with mares shown by G. A. Polley and W. H. Muir in second and third positions.

The four-year-old filly class was led by T. C. Latham's Harriet King, by Robert King. Harriet was first and champion mare at Halifax in 1915.

A General Bingen filly headed the two-year-old class, while first and second places in yearling fillies went to the get of Achille and Major Stratton.

Bengara, Royal Pandect, and Major Stratton foals came in for the red, white, and blue ribbons respectively in their class.

Blanchard Brenton's Princess Achille by Achille, yearling filly, was the champion female of the Standard Bred class, and similar honors in the stallion class went to Hammond Kelly's stallion, Mayor Todd.

Ponies

The showing in the pony classes was very creditable. Much interest was taken by the public in a bunch of 40 Sable Island ponies stabled on the grounds and sold by auction by the Department of Marine and Fisheries before the close of the fair. The whole bunch was in very good fit, and seemed quite content with their surroundings, although formerly only acquainted with the sandy dunes of Sable.

Hackneys

were few in number, but of good quality. The most important entries being R. A. Snowball's Fillgrave Royal John, a mare shown by W. Anderson, Halifax, and two fillies, one by Fashioner, the other by Island Swell, shown by Geo. L. Boswall.

General Purpose Horses

were particularly few in number this year.

Agricultural Horses

This class was a walkover in each section, as will be seen by the list of winners elsewhere in this issue.

Heavy Draughters

Sharp & McNeil, of Windsor, showed some very fine heavy draughters, the get of Baron Frederic.

McFarlane Bros. showed a brood mare with foal by her side, and Frank Archibald, Truro, showed a handsome matched pair of dark greys.

The Clydesdale Class

made the best showing of all horse classes at Halifax.

Snowball's Baron's Own, Sharp & McNeil's Golden Nugget, and McFarlane Bros.' Boreland Crest were placed in their respective order in the aged stallion class.

Snowball's Kelvin's Pride, by Baron Kelvin, led the two-year-old stallion section, and also captured the male grand championship. Prescott Blanchard's Hillside Baron, by Royal Baron, stood in for second money in this class.

A Baron Squire yearling stallion shown by McFarlane Bros. had no competition in his class.

There were three fine brood mares with foals by their sides, and the judges awarded prizes as follows: Snowball's Rose of Litterty with foal by Baron's Own; McFarlane Bros.' Bess Spencer, by Sir Simon, and foal by Baron Squire; and Blanchard's mare by Baron of Bucklyvie, and her foal by Lord Ullen.

McFarlane Bros.' Nell Bowie, by Golden Chief, had no competition in the four-year-old filly section.

A Royal Baron filly shown by Mr. Blanchard had a similar walkover in the three-year-old class.

Two Baron Squire fillies and a Handy Andy competed for honors in the two-year-old class, and were placed in the order named.

Baron Squire, Baron's Own and Lord Ullen were the sires of the respective prize winners in the foal of 1916 class.

McFarlane Bros.' Nell Bowie captured the diploma for best female, any age. The best Canadian-bred female prize went to Blanchard's Hillside Miss Trim, by Royal Baron.

Snowball's Baron's Own was awarded first money for best imported stallion, closely followed in second place by Sharp & McNeil's Golden Nugget.

The Queen Hotel Cup for the best five horses was captured by R. A. Snowball with Baron's Own, Kelvin's Pride, Rose of Litterty, Jennie Lind, and the Hackney stallion Fillgrave Royal John.

THE BEEF CATTLE

were judged by Mr. Calder, of Ontario. He found two good herds of Shorthorns shown by J. M. Laird & Son, of Kelvin Grove, P. E. I., and A. N. Griffin, New Minas, N. S. Both herds were out in fine fettle. The majority of the young stock in both herds was by Stately Monarch, formerly owned by Mr. Griffin, but now at the head of the Laird herd.

The female championship went to Laird's Elmdale Rose Drop, shown in the twoyear-old heifer class.

Stately Monarch was the male champion and sire of the best three animals get of one sire.

Laird's Emily of Willow Glen, second prize cow in the four-year-old and over section, was first with two of her offspring.

The aged herd prize went to Laird & Son, and the breeders' young herd prize to Mr. Griffin.

Herefords

William O'Brien & Sons, Windsor, were out with a strong herd of Herefords, but met no competitors. They had a full entry of well fitted individuals, and were truly prepared to meet competition.

Devons

W. A. Pinkney was on hand with his uniform Devons. He, too, had no competitors.

Aberdeen Angus

Horne Bros., Winsloe Station, P.E.I., were the only exhibitors of Doddies. Horne Bros. are young breeders who made their bow for the first time at Halifax. They made a very creditable showing.

Grade Beef Cattle

were shown by E. S. Congdon. William O'Brien & Sons, Robert McLeod, and Thomas Aylward.

Fat Cattle and Working Oxen

There was a large entry in the class for fat cattle and working oxen. The best showing made in these sections at Halifax for many moons. Prize awards will be found on another page.

DAIRY CATTLE

The showing in the dairy classes at Halifax surpassed all shows previously held in Nova Scotia, with the possible exception of the year when the Dominion Exhibition was there held. In fact, we would judge that this year's show excelled that of Dominion Exhibition year, because although there were fewer exhibitors in the respective classes this year there were more high-quality animals found in the respective herds than was the case on the previous occasion. Herds that at the time of the Halifax Canadian Exposition contained one or two or three outstanding typical animals, and the balance varying in type, have now been bred up to a surprising consistency in breed, type, and conformation. It is quite evident that weeding out the inferior types has been consistently followed by our Maritime Province breeders.

Mr. Alex Hume, of Menie, Ontario, placed the awards in the Ayrshire, Holstein, and their grade classes. D. G. Duncan, of Don, Ontario, judged the Channel Island breeds and their grades.

The Ayrshires

made a particularly strong showing. Prescott Blanchard and John Retson, Truro; A. McRae & Sons, Charlottetown; John McDonald & Son, Shubenacadia; and McIntyre Bros., Sussex, had their herds out in the pink of condition. McIntrye Bros.' Morton Mains Amantha and McRae's Hobsland's Tumphie's Heir were the only contestants for honors in the aged bull class. Morton Mains Amantha captured the red ribbon, and later the male championship, while Hobsland's Tumphie's Heir stood in for the blue ribbon, and later led the aged herd to victory, and was first with three of his get—the sire of second and fourth prize quartettes get of one sire, and the sire of many promising youngsters among the winners in the other sections of the class.

John McDonald & Son had the only entry in the two-year-old bull class.

McIntrye Bros. led the way with yearling bull, followed in second and third places respectively by John Retson's Pink Pills and one shown by John McDonald & Sons.

In the bull calf class Prescott Blanchard captured the red ribbon with a half brother to Peter Pan, the grand champion male at Toronto this year. McRae, McIntyre, and Retson came next in the order named.

There was a strong showing of matronly dry aged cows. Prescott Blanchard Howie's Bright Lady, a daughter of the famous Peter Pan, led the way. Howie's Bright Lady was imported from Scotland by Mr. Blanchard when she was quite young. She is the dam of Hillside Peter Pan, the champion bull at Toronto this year, and also the dam of the first prize bull calf. In the dairy test at Amherst she won second place in her class, all of which tend to prove that Howie's Bright Lady is not ony a show cow and producer, but also a prepotent dam of show ring winners.

Mr. Blanchard was, practically speaking, only a boy when he selected Bright Lady, and he certainly must feel proud of his choice and the success she has attained.

Two McRae cows in second and fourth positions sandwiched Retson's Jennie Imp, the latter a first prize winner as three-year-old in 1913, and at one time second in her class in the Amherst dairy test.

A. McRae & Sons captured the red ribbon in the four-year-old and over class for cows in milk, with their Nellie of Springbrook Farm, and with her also captured the female championship.

McIntyre Bros.' Morton Main's Lady Nelly was first with two of her progeny, and the dam of two the progeny of one cow winners of the first prize Ayrshire Special in this class.

McIntyre Bros. led the way with breeders' young herd.

Blanchard captured the Ayrshire Special for animals get of one sire with the get of Special Spice by Spicy Sam.

Retson showed a nice senior yearling heifer by Retson's Choice out of Princess Belle, a cow with a record of 61½ pounds of milk in one day.

The other awards in the Ayrshire class, which we must pass over without any special mention, owing to lack of space, will be found on other pages of this issue.

Jerseys

H. S. Pipes & Son, Cann Bros., Blake Bros., and T. C. Latham exhibited Jerseys. The major portion of the prizes went to the Pipes and Cann herds. The contest was lively throughout, and there were no walkovers for anybody.

In the aged bull class Pipes & Son's His Reverence captured first money. The second award went to Cann Bros.' Figgis Fox Glen Fox O'Dreamwold, and Blake Bros.' bull came in for third.

In the two-year-old bull class Pipes & Son had the only entry, Bright Knight by Bright Prince. They also had the first prize winner in the senior yearling bull class in Ben Blue by His Reverence.

Cann Bros. captured the red ribbon on junior yearling bull.

In the aged cow class H. S. Pipes & Son's Blood's Choice by Blue Blood headed the list, and was female champion and first with two of her progeny.

As a two-year-old Blood's Choice was champion two-year-old of all breeds in the dairy test at Amherst. Cann Bros.' Fox Hall's Queen and Lady Maud were the second and third prize winners in this class.

Two Pipes cows sandwiched a Cann cow in the dry cow class. In the threeyear-old class two Cann cows sandwiched a Pipes cow.

In the two-year-old and senior yearling heifers Pipes again sandwiched individuals from the Cann herd.

The majority of Pipes young stock was sired by His Reverence, who was first with three of his get.

Guernseys

were out in full force at Halifax. H. W. Corning, D. G. McKay & Son, and Roper Bros. had their well-fitted herds in a three-cornered contest. Faulkner & Hill also had a few entries.

Corning's aged bull, Island Prince of Hillside, led his class, was awarded the male championship, was first with three of his get, and headed the first prize aged herd.

Roper Bros. had the female champion in Dolly Charlotte, the first prize senior yearling heifer by Rosclander out of Dolly of the Villet.

Corning's Dairymaid of Hillside, the first prize aged cow in milk, was also first with two of her progeny. McKay's aged bull, Imported Lord Trim, captured the third award in his class. Messrs. McKay, Corning, and Roper have done more to promote the Guernsey breed in Canada than any other breeders, and their herds are a credit to their respective owners.

Holsteins

There were three strong herds of Holsteins in the ring—Harding Bros., from New Brunswick; W. M. Lea, from Prince Edward Island; and S. Dickie & Son, from Truro.

The Harding herd was back from a long circuit of fairs at Sherbrooke, Quebec, Valleyfield, and Three Rivers, in the Province of Quebec, where they were successful in capturing many of the choicest awards.

The Island herd was not as strong as usual, owing to the fact that in former years the showing consisted of the choicest animals from the herds of W. M. Lea and Fred Clark, shown under the firm name of Lea & Clark. Mr. Clark has moved to one of the western provinces, and consequently the partnership has been dissolved. As will be seen by the prize winning list, the Lea herd is not, however, a herd of weaklings, and showed an abundance of quality at Halifax.

The Dickie herd has been faithfully working up a bunch of producers, and have been phenomenally successful in the Amherst dairy tests.

In the aged bull class Lea's Ida Rookie's II Vale led the way, followed in second place by Harding's Colony Port Jake, grand champion bull this year at Quebec and Sherbrooke.

Harding's Sir Foforit Schuling, grand champion at Three Rivers and reserve champion at Valleyfield, led the two-year-old bull class.

In senior yearlings Harding Bros. again led the way with Percilla's Schuling Posch, followed in second place by Dickie's Prince Colantha Canary, whose four nearest dams have an average butter record for 7 days of over 32 pounds. He is the son of a thirty-pound daughter of the 36-pound butter in 7 days cow, Madame Posch Polly, a cow that gave 122 pounds milk in one day, 28,000 pounds milk in one year, and averaged 100 pounds milk per day for 6 months. The get by this promising young bull and the high producing cows in the Dickie herd will surely be money makers for their future owners.

The dry four-year-old cow class contained many illustrious dames. Miss La Honda, the grand champion cow in the dairy test in 1912, 1914, and 1915, at Amherst, headed the list, and was awarded the female championship.

(Continued on page 800)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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SEPTEMBER 26, 1916

DATES OF ISSUE.

October .....10—24
November ..... 7—21
December ..... 5—19

ABATTOIR FACILITIES

Has any one wondered why it is that stock raising languishes in New Brunswick, with wool at hunheard-of prices and lamb, beef, and pork all selling at high levels? We see and know of all the various governments are doing to promote the live stock industry in general as to breeding methods and care and feeding. Yet here we have no growth. A little investigating will show that while our meat prices, on the hoof, seem high, they are lower than elsewhere, live hogs here being about at the same figure as dressed hogs in Toronto, while cattle are lower. Mutton, being scarcer, ranges nearer the right figure. It is granted that the cattle are, in large majority, light and not quotable alongside Western steers. But that does not apply to our hogs. The truth is that outside buyers cannot pay our farmers the price and then stand the high rate for a long haul to market, plus feeding charges en route, shrinkage in weight in transit, and loss outright from injured animals. And they cannot have them slaughtered here because there is no place to do the work, in season and out, subject to the law which says that to be transported from one to another province (the three lower provinces being treated as one for the purposes of the act), dressed meats must be examined before and after killing by qualified men and the whole work done in sanitary premises properly equipped. Since nothing in New Brunswick conforms to the very moderate requirements of the act, our farmers suffer the lack of market and are virtually forced to sell in St. John. It does not require much calculation to show that the feeding of our population of 350,000 people is not a very expansive proposition for an area of 28,000 square miles. Yet the salient fact remains that we do not do it—not by a great deal. We understand that it takes practically three cars of dressed beef from Ontario each week to feed the city of St. John alone. This represents, in good money, well over $5,000—a quarter of a million a year.

It is no part of our intention to argue for beef productino as against dairying for any locality. But we do say that our growers of any class of meats are entitled to the benefit of the world's market. As it now stands, the small live stock operators who kill for local use largely fix the prices our people get for their product, while the packers of the large centers, who ship in the better class meats, fix the price the urban or city consumer pays. Between the two lies a wide margin, as in evidenced by the flush prosperity of the traders.

Reduced to its finest terms, the Dominion Government says that while its officers in one division are willing and anxious to help our people grow more and better live stock, another branch says that our slaughtering conditions are unspeakably bad and accordingly we cannot send away the product. If we wish to eat it ourselves, well and good. That is a matter for local authority.

It cannot be said to be greatly to the credit of the city of St. John that for sixteen years there has been on the statute books authority for them to spend money to provide proper public slaughtering facilities and that nothing has been done or seems likely to be done. The public do not understand. The civic rulers do not understand. The farmer does not understand. The civic ordinances of a city like St. John surely need stirring up anyway. Think for a moment that it is illegal, there, to offer for sale undrawn poultry, whereas anywhere else under the canopy drawn birds are classed as an archaic market commodity, and rightly so—wasteful, unsanitary, perishable, and in all ways undesirable. In consequence, our farmers must fit for market in two ways. If they draw the birds they can be sold only in St. John. If they draw them they can be sold nowhere else. All this makes centralization impossible and marketing purely a hit-and-miss proposition.

Adverting again to the abattoir, it does seem to us, after all, that if, once more putting on the soft pedal, St. John is willing to use the output of slaughter houses which men who are paid to know say are highly improper, we do not see that it should worry the farmer, except as it cuts down his market to St. John alone, while, as we have pointed out, doing no one outside the drovers any good because they do not make the consumers' price.

In the last analysis, this is a Provincial matter. Experts representing private capital say our field is too small for them to invest in. It never will be any larger until an outlet is provided. That done, ten years hence would see us attracting their attention, never fear. It is not suggested that the Province enter into the dressed meat trade at all, but might not the Province guarantee the securities of a small company to undertake this necessary work, taking power to regulate charges for slaughtering service? As a practical step toward the bettering of live stock prices, which will be followed by heavier production just as certainly as night follows day, nothing could more quickly cut the knot which ties up development now. We commend this statement of conditions as they are to the careful attention of every farmer. Nothing should be done to interfere with private slaughtering by farmers for themselves. The question is purely one of surplus stock, unless St. John wakens up and asks itself for something sanitary at the same time.

FARMERS SHOULD KNOW THE NAMES OF SEEDS THEY SOW

Twenty per cent of the 400 farmers visited in the Agricultural Survey in Ontario in 1915 did not know the name of any variety of grain sown on their farms. In Dundas County, where 100 farms were visited, of a total of 86 farmers growing barley only 11 knew the variety grown. Fifty-two per cent of the 400 farmers visited in the province were growing barley, and only 18 per cent knew the name of the variety.

Only 64 per cent of all the farmers visited knew the name of the variety of oats they were sowing. This state of affairs exists not only in the Province of Quebec, but also to a very large extent in the Maritime Provinces. Those who do not know the variety used may be sowing grain unsuited for their farms. There is very little excuse for the prevalence of such conditions. Every farmer sowing an unknown grain lives within reach of some farmer who grows a known sort of proved excellence, from whom seed can be obtained. It is one of the easiest things in the world to get a good variety of seed grain. We know a great many successful growers who started with a three-pound sample procured from the Experimental Farm, Ottawa. By carefully husbanding these samples for two or three years they were able to dispense with the unknown varieties formerly grown. Hand selection and fanning mill selection pay.

WHY MARKETING IS HARD

Here are some of the reasons why the farmers' marketing problem is the hardest in the world: ruin it. It cannot be stored like coal or shoes. It cannot be held for demand. It must be sold. Cold storage offers only a partial help.

Production is seasonal. It cannot be spread out over the year to reduce overhead and keep labor constant. One crop piles on another, and there is a tremendous strain on means of distribution. He does a year's work in six months.

The supply is irregular. On account of crop failures or excess there is no way to meet a fixed demand with a fixed annual supply. In one section there is too much or too little. Moreover, there is no way of sending the surplus to a less crowded market as the manufacturer does.

The supply comes from innumerable small sources, and not from one big, wellorganized plant. There is no way of regulating or controlling the production of these small units, of standardizing it, or of handling it to keep a constant level of supply.

The means of handling—elevtors, storage houses, markets, railroad facilities—are not designed to aid the farmer. He takes what he can get.

In many cases the food stuff is not standardized. Manufactured goods is made to conform to a standard. Even in a bulk food like grains there is a great need for standardization.

When you compare these factors with the facts of distribution in other lines, you are not surprised that the farmer is centering his attention more and more on marketing. He needs to, and he needs help.

DOING THINGS RIGHT

To do things in just the right way, and at as near the right time as possible, is one secret of good crops. Perfect treatment of seed grain and seed potatoes to prevent smuts, rusts, and blights takes no more labor than slipshod methods; it does take more carefulness, more pains, more know-how, but what a liberal reward!

The vital thing is the know-how and the doing of it. That is why the best farmers who know the most are so eager to learn more. The fellows who "know it all," but whose buildings and lands fail to prove it, are the only ones who object to science in agriculture.

MARKET FOR POTATOES IN ARGENTINA

In a report to his government, published in the United States Commerce Reports, U. S. Consul Charles J. Pisar, Buenos Aires, says that during the last four years there has been a continuous increase in the importation of potatoes into Argentina, although aside from those coming from France the sources of supply have been irregular.

The annual consumption of potatoes in Argentina amounts approximately to 55,000 tons, or a little over 150 tons per day. The annual domestic production in normal times does not exceed 50,000 tons, so about 5,000 tons must come fro mabroad. Besides this, Argentina imports practically all the potatoes destined for seed purposes, most of which have been coming from France.

During the seasons of 1913-14 and 1914-15 the domestic potato crop was poor, especially during the latter season, and consequently large consignments for consumption purposes had to be sought abroad. All the potatoes imported into Argentina, whether destined for seed or for consumption purposes, are brought into the country under the custom classification of Potatoes for Seeds, on which there is no duty.

With the arge demand for potatoes in 1915, important shipments came from the United States and from Spain, although both these countries had never before figured prominently as exporters of potatoes to Argentina.

Countries Supplying Potatoes to Argentina

The total imports (in pounds) during the years 1912, 1913, 1914, and 1915, and the countries of origin, were as follows:

Country.	1912.	1913.	1914.	1915.
Germany	1,624,453	944,713	69 503	80,027
Austria-Hungary	16,225	.....	.....	147,790
Belgium	686,739	.....	.....	.....
Spain	207,052	544,101	.....	30,092,517
Sweden	.....	.....	192,904	.....
France	13,831,773	15,729,329	12,969,358	36,259,929
Italy	378,430	.....	5,877,355	402,704
Netherlands	7,274	1,439,753	123,926	554,559
British possessions	.....	.....	.....	377,784
Great Britain	17,988	201,546	248,020	552,378
United States	.....	.....	4,962,544	23,418,667
Uruguay	.....	.....	838,607	69,445
Other countries	19,842	.....	2,369	.....
Total	16,789,776	18,859,442	25,284,586	91,955,800

The potato for seed purposes most in demand here is the Early Rose. It is popular, and it seems that the Argentine grower will have nothing else. Seed potatoes should weigh about two and a half ounces each. The annual requirements for seed potatoes are about 6,000 to 7,000 tons. They must be ready for shipment so as to arrive in this country during the months of August, September, and October.

Potatoes for consumption should weigh not less than three ounces each and not over five ounces, or aproximately ten potatoes to the kilo (2.2 pounds). The white potato is more in demand for consumption purposes than the Early Rose.

Packing and Preparing for Shipment

All potatoes intended for shipment to Argentina must be packed in light, airy crates of 30 and 50 kilos (66 and 110 pounds, respectively) capacity, and in barrels of 76 kilos (167 pounds).

The smaller sized crates containing 30 kilos are the most popular, and are quite often built with a center partition. These crates should be so constructed as to permit of a free circulation of air between the slats, although at the same time providing a strong container for the potato. To give the crates more resistance they should be bound on the outside edges and also in the center with a narrow strip of chestnut bark or iron bands.

All prices should be quoted per crate and not per pound or bushel. The weights should be given in the metric system.

Sanitary Certificates for Imported Potatoes

An executive decree of Argentina, dated May 20, 1913, provides that every shipment of foreign potatoes shall be accompanied by certificates, one of sanitary origin (sanidad-origen) attesting the healthful condition of the soil in which the potatoes were grown, and the other a certificate of soundness or wholesome condition of the potatoes under consideration. These certificates must be issued by government experts in the country of origin, and viseed by an Argentine consul.

The Domestic Crop for 1915-16

The domestic potato crop of the Argentine Republic for the present season (1915-16) is reported to be abundant and in an excellent state. Growers have been favored with excellent climatic conditions during the present season, and with just enough rain during the last few months to render the potatoes in a not too watery state, so that they may keep well for some time. Local marketmen and those closely connected with the potato trade are of the opinion that the demand for foreign potatoes will be nowhere near to that of 1915. However, there always remains the annual demand for seed potatoes which American shippers should not overlook, and the demand for potatoes for consumption purposes at times when the crop falls below its normal production.

COMMUNITY BREEDING AND INDIVIDUAL BREEDING

The topic of community breeding is discussed more or less in farmers' institutes, in the farm journals, on the street corners, and every place where farmers are likely to get together, but seemingly never has been threshed out satisfactorily.

When a farmer brings in a Hereford bull, for example, many of his neighbors may declare that the Hereford is the wrong breed of cattle for that vicinity. Maybe they would be right in such an attitude toward any particular breed. It is possible that this man never asked a single neighbor whether or not he liked Hereford cattle or whether he thought that they would thriv and be money makers in their locality. Rather than seek counsel among his neighbors and friends he would spring a surprise on them and trust to his own judgment or good luck to win out. There are men who seemingly are so intent on such a surprise, or are so fully grounded in their self-conceit, that they scarcely have any live stock or even farm machinery like any one else's in the community. A man frequently takes issue with a neighbor that this or that breed of live stock has off colorings, styles of build, or inherent dispositions that he dislikes. He may ignore completely the question of economical gains under similar conditions. We all have fancies for these little things that we like, and rightfully, too, but we should be able to lay some of them aside on occasion when it comes to a matter of co-operation and larger gains. There are few instances on record where team work in community breeding has not brought good results.

There are a score of advantages that come from community breeding. The up-to-date farmer has decided unanimously in favor of the pure bred, be it horse, cow, sheep, hog, or fowl. It goes without argument that it is better for farmers having the same soil, climate, and market conditions to put their capital together and buy one high class sire rather than for each to take his little portion and buy a questionable sire of a breed that few, if any, of his neighbors have. This is especially applicable to the horseman or cattleman, as good sires in these branches of live stock cost more than the average breeder can afford. When it comes to marketing the various animal products or surplus breeding stock we find many advantages in favor of co-operation. A community tying together on a certain breed of chickens gets a nice premium above the average on eggs, because they are uniform in size and color. When a company of farmers joins hands on a breed of dairy cattle good sires take the place of many questionable ones; their surplus breeding stock brings a nice margin above market values, and if one man does not have what the purchaser wants in all probability his neighbor has.

We need not confine community breeding to live stock alone, but may extend it to fruit, vegetables, and grains, and reap equally satisfying rewards. Community breeding also is one of the strongest arguments in favor of the community farm adviser, as his work is sure to pave the way for more co-operative activities among country folk.—Breeders' Gazette.

MAKING THE SOIL FRIENDLY

There is one phase of the lime discussion which does not seem to be thoroughly brought out. The writer has many times heard Prof. Alva Agee use the term, "Make the soil friendly." I know of no other truer maxim than the above quotation. Most any farmer can get a good stand of the grasses and clover if his soil is in good heart, properly seeded, and followed by plenty of moisture through the summer.

The moisture conditions of the greater part of New England for the past six years have been against seeded grasses. These are usually sown with spring grain, either oats, wheat, or barley, which in a dry time use up the soil moisture to such an extent as to largely kill out the grasses in an unfriendly soil. In the past I have laid this dying out of the new seeded grasses entirely to drouthy conditions, but such is not the case, at least in a good many instances. Newly seeded grasses will die out in a very dry time in an unfriendly soil, although it may be rich in plant food, when were the soi lfriendly the same amount of dry weather will have but little effect in preventing a good catch with a heavy yield the following year.

To test a field, as to its need of lime, the writer limed a small plot some 50 feet square on the top of one of the dryest knolls in the field. This was applied in September, when the sod was being worked up with a cutaway harrow, preparing it for potatoes the next season. When it came to grass following potatoes this limed spot had a heavy crop of hay, while the balance of the field had a very poor crop, killed out, according to my old opinion, by a six weeks' drouth in the early summer of the year it was seeded. Yet there was a fine catch of clover on the spot made friendly by liming two years previous.

There is a grave question in my mind whether or not part of the troubles of the potato growers of southern Maine are not traceable to the lack of lime in their soils. It has seemed to me that limed soil was not favorable to some of the potato diseases, like Rhizoctonia. Thus I have in a small way been liming some of my potato land previous to planting potatoes, and this has brought out very forcefully the difference between having a soil friendly to the grasses or hostile to them.

In the spring of 1913 I limed a small patch of two and a half acres. This was plowed on an average of 10 inches deep being well turned, and one ton per acre of agricultural lime broadcasted on the furrow before harrowing. The season being dry no apparent result was noted in the growth or freedom from disease in the potatoes. The patch was plowed in the spring of 1914 and sown to wheat and seeded about May 15. Both grass and clover came finely, but no better than I have had it on most of land I have seeded in the last ten years; but, contrary to all my seeding where no lime has been used, this lived through the dry weather and was a fine sight after the wheat was harvested. A part of this piece was clay and low, and I fully expected the clover to be all winter killed on this low clay portion of it. Today (June 14) the growing grass it at least two feet high and stands as thick as any I have ever seen on any field, and will produce a very heavy crop of hay even if no rain falls before it is cut.

This piece has never had any barn dressing on it since I have farmed it —some fifteen years—and probably not for thirty to forty years in all. The point is that the soil was made friendly to the grasses by the lime, which, being applied on the furrow before fitting to plant potatoes, the cultivating of the potatoes, digging, with the plowing and fitting for the wheat the next season thoroughly worked the lime through the soil plowed, so that the whole mass of it was in the friendly condition so aptly set forth by Prof. Agee.

Had this lime been applied just before sowing the wheat and seeding, I doubt very much if the results would have been so tremendous. It would not have been possible to have gotten it so mixed through the whole depth plowed as to have made those friendly conditions that would have carried the young grass through a long summer's drouth, a long dry fall, and hard spring conditions following.

I have hardly, if ever, seen the grass in general looking so poorly on this date as it is at the present time all over the southern part of the state, yet were all my fields as friendly to the grasses as is this two and a half acre piece I have describe dabove I would harvest as large a crop of hay as the farm ever produced.—E. A. Rogers, in Maine Farmer

USE OF LATE FALL PASTURE

We all like to make use of cheap pasture as long in the fall as possible, but it is a great mistake to make use of it so long that cattle commence to shrink. Let an animal start losing in weight at this season of the year and wintering in good shape is much more difficult.

We always aim to start "piecing out" a pasture before there is any noticeable shrink in the cattle, doing it with a feed of fodder once a day. By adopting this plan it is possible to keep cattle on pasture for a greater length of time than if the change is made entirely and at once from pasture to dry feed. We like to have on the farm a few acres of some forage crop that may be used as an aid to short fall pastures. With no bad storms, it is often possible to make a pasture half feed cattle for a month after no use of it could be had at all if the plan of using it only as long as it furnishes a full ration is adopted.—H. H.

Prize Winners at the Halifax Exhibition

HORSES

Standard Breds

Stallion, 4 years old—1, Hammond Kelly, Charlottetown, Major Todd; 2, Blake Bros., Shubenacadic, Eddie De Forest; 3, R. A. Backman, Lunenburg, Lookout.

Stallion, 3 years old—1, T. D. Blaikie, Great Village, Micmac, by Achille; 2, J. Edgar Smith, Kingston, Brenton S., by Achille.

Stallion, 2 years old—1, Blanchard Brenton, Brentwood, by Achille.

Stallion, 1 year old—1, W. H. Muir, Halifax, by Captain Aubrey; 2, T. D. laikie, Achille.

Brood Mare with foal—1, E. J. McKenna, Kingston, Kitty Giltner, by Gazette, foal by Royal Pandet; 2, G. A. Polley, Lunenburg; 3, W. H. Muir, by Achille.

Filly, 4 years old—1, T. C. Latham, Sylvester, Harriet King, by Robert King, first and champion of 1915; 2, J. Edgar Smith, Kingston.

Filly, 2 years old—1, E. J. McKenna, by General Bingen; 2, T. D. Blaikie, by Achille.

Filly, 1 year old—1, Blanchard Brenton, by Achille; 2, H. S. Pipe's & Son, Amherst, by Major Stratton; 3, Chas. Walker, Halifax.

Foal of 1916—1, G. A. Polley, foal by Bengara; 2, E. J. McKenna, by Royal Pandet; 3, H. S. Pipes & Son, by Major Stratton.

Mare, any age—Blanchard Brenton, Princess Achille, by Achille.

Stallion, any age—Hammond Kelly, Charlottetown, Major Todd.

Roadsters

Filly or Gelding, 3 years old—1, F. M. Miller, Kingston; 2, John E. Godwin, Halifax; 3, Hugh G. Fraser, Halifax, Marico F.

Filly or Gelding, 2 years old—1, L. B. Dodge, Middleton, by General Bingen; 2, Nelson Auld, Halifax.

Filly or Gelding, 1 year old—1, Capt. S. L. McNeil, Halifax.

Pair Matched Roadsters—1, Spurgeon Gammon, New Glasgow; 2, Otis Gardiner, Shulenacadic.

Single Horse in Harness—1 and 2, Spurgeon Gammon; 3, E. J. McKenna.

Carriage Horses

Filly or Gelding, 2 years old—1, E. J. McKenna, by Marshal M.

Filly, 1 year old—1, Geo. L. Boswall, Island Swell.

Pair Matched Carriage Horses—1, Spurgeon Gammon; 2, W. H. Isnor, Halifax.

Single Horse in Harness—1, Geo. L. Boswell, French Fort, P. E. I., Gilly, by Fashioner; 2, Spurgeon Gammon; 3, Frank Adams.

Best Horse, any age—1, George L. Boswall.

Ponies

Stallion, over 12 and under 14 hands—1, R. A. Snowball, Hackney Pony. Allfire; 2, S. H. Taylor, Lower Stewiache, Dandy.

Mare or Gelding, over 13 hands—1, Allan O. McLellan, Halifax; 2, Leo Dunn, Halifax; 3, Leo Driscoll, Halifax.

Mare or Gelding, over 12 hands—1, Allan D. McLellan.

Mare or Gelding, under 12 hands—1, John R. Fisher, Truro; 2, Howard Parsons, Halifax.

Shetland Stallion—1, Miss Elizabeth Freeman, Halifax.

Shetland Mare or Gelding—1, C. P. Spencer, Truro.

Hackneys

Stallion, 4 years old—1, R. A. Snowball, Chatham, Fillgrave Royal John.

Filly, 4 years old—1, Willoughby Anderson, Halifax; 2, George L. Boswall, Fashioner.

Filly, 2 years old—1, George L. Boswall, Island Swell.

Hackney Specials

Best Stallion—1, R. A. Snowball, Fillgrave Royal John.

Best Mare—Willoughly Anderson.

Tandems

Mares or Geldings—1, Spurgeon Gammon; 2, W. H. Isnor & Sons.

Saddle Horses

Hidden by Gentlemen—1, George L. Boswall.

General Purpose Horses

Mare or Gelding, 4 years old—1, Frank Archibald, Truro; 2, F. W. Foster, Kingston.

Matched Team—1, John McKenzie, Shubenacadic.

Agricultural

Mare or Gelding, 4 years old—1, McFarlane Bros., Fox Harbor Point, N. S.

Filly or Gelding, 2 years old—1, William Kidston, Goffs, N. S.

Filly or Gelding, 1 year old—1, McFarlane Bros.

Brood Mare with Foal—1, Allison McDonald, Shubenacadic.

Foal of 1916—1, Allison McDonald.

Matched Team—1, Frank Adams, Halifax.

Heavy Draughters

Mare or Gelding, 4 years old—1 and 2, Sharp & McNeil, Windsor.

Mare or Gelding, 3 years old—1, Sharp & McNeil.

Filly or Gelding, 2 years old—1, Sharp & McNeil.

Brood Mare with Foal—1, McFarlane Bros.

Foal of 1916—McFarlane Bros.

Matched Team—Frank Archibald, of Truro.

Clydesdales

Stallion, 4 years old—1, R. A. Snowball, Chatham, Baron's Own; 2, Sharp & McNeil, Windsor, Golden Nugget; 3, McFarlane Bros., Fox Harbor Point, Boreland Crest, by Scottish Crest.

Stallion, 2 years old—1, R. A. Snowball, Kelvin's Pride; 2, Prescott Blanchard, Hillside Baron, by Royal Baron.

Stallion, 1 year old—1, McFarlane Bros., by Baron Squire.

Brood Mare with Foal—1, R. A. Snowball, Rose of Litterty, foal by Baron's Own; 2, McFarlane Bros., Bess Spencer, foal by Squire; 3, Prescott Blanchard, by Baron of Bucklyvie, foal by Lord Ullen.

Filly, 4 years old—1, McFarlane Bros., Nell Bowie.

Filly, 3 years old—1, Prescott Blanchard, by Royal Baron.

Filly, 2 years old—1 and 2, McFarlane Bros.; 3, H. S. Pipes & Son, by Handy Andy.

Filly, 1 year old—1, R. A. Snowball, Jennie Lind, by Baron's Own; 2, McFarlane Bros., by Squire.

Foal of 1916—1, McFarlane Bros.; 2, R. A. Snowball; 3, Prescott Blanchard.

Stallion, any age—R. A. Snowball.

Mare, any age—McFarlane Bros., Nell Bowie.

Clydesdale Association Specials

Best Imported Stallion—1, R. A. Snowball, Baron's Own; 2, Sharp & McNeil.

Best Imported Female—1, McFarlane Bros., Nell Bowie; 2, R. A. Snowball, Rose of Litterty.

Best Canadian Bred Stallion—1, R. A. Snowball, Kelvin's Pride.

Best Canadian Bred Female—1, Prescott Blanchard, by Royal Baron, Hillside Miss Trim.

Best Single Mare or Gelding in Harness Sired by Clydesdale Stallion—1, Sharp & McNeil.

Best Pair Mares or Geldings in Harness, Sired by Clydesdale Stallion—1, Sharp & McNeil; 2, McFarlane Bros.

Best Stallion, any age, Silver Cup—R. A. Snowball, Kelvin's Pride.

Queen Hotel Cup for Best 5 Horses—R. A. Snowball, Baron's Own, Kelvin's Pride, Rose of Litterty, Jennie Lind, Fillgrave Royal John.

BEEF CATTLE

Shorthorns

Bull, 3 years old and upwards—1, J. M. Laird & Son, Kelvin Grove, P. E. I., Stately Monarch, by Proud Monarch.

Bull, senior calf—1 and 2, A. N. Griffin, New Minas, N. S., by Sately Monarch; 3, J. M. Laird & Son, by Waterloo King.

Bull, junior calf—1, A. N. Griffin; 2, J. M. Laird, Kelvin Prince.

Cow, 4 years old and upwards—1 and 2, J. M. Laird & Son.

Cow, 3 years old—1, J. M. Laird & Son.

Heifer, 2 years old—1 and 3, J. M. Laird & Son; 2, A. N. Griffin, Scotch Lady, by Scottish Heather.

Heifer, senior yearling—1 and 2, A. N. Griffin; 3, J. M. Laird & Son.

Heifer, junior yearling—1 and 2, J. M. Laird & Son.

Heifer, senior calf—1, J. M. Laird & Son.

Heifer, junior calf—1, J. M. Laird & Son; 2 and 3, A. N. Griffin.

Champion Bull—Stately Monarch, J. M. Laird & Son.

Champion Female—J. M. Laird & Son.

Best 3 Animals, get of one bull—J. M. Laird & Son.

Best 2 Animals, progeny of one cow—J. M. Laird & Son.

Aged Herd—1, J. M. Laird & Son.

Breeders' Young Herd—A. N. Griffin.

Shorthorn Specials

Bull and 3 of his get—J. M. Laird & Son.

Cow and 2 of her progeny—J. M. Laird & Son.

Herefords

Bull, 3 years old—1 and 2, Wm. O'Brien & Sons, Windsor.

Bull, senior calf—1, William O'Brien & Sons.

Bull, junior calf—1 and 2, William O'Brien & Sons.

Cow, 4 years old—1, 2, and 3, William O'Brien & Sons.

Cow, 3 years old—1, 2, and 3, William O'Brien & Sons.

Heifer, 2 years old—1 and 2, William O'Brien & Sons.

Heifer, senior yearling—1 and 2, William O'Brien & Sons.

Heifer, junior yearling—1, 2, and 3, William O'Brien & Sons.

Heifer, senior calf—1 and 2, William O'Brien & Sons.

Heifer, junior calf—1 and 2, William O'Brien & Sons.

Champion Bull—William O'Brien & Sons.

Champion Female—William O'Brien & Sons.

Best 3 Animals, get of one bull—William O'Brien & Sons.

Best 2 Animals, progeny of one cow—William O'Brien & Sons.

Aged Herd—1 and 2, William O'Brien & Sons.

Breeders' Young Herd—1 and 2, William O'Brien & Sons.

Hereford Specials

Bull and 3 of his get—1, William O'Brien & Sons.

Female and 2 of her progeny—William O'Brien & Sons.

Devons

All prizes in the Devon classes were awarded to W. A. Pinkney, Melborne, N. S., without competition.

Aberdeen Angus

All prizes in the Aberdeen Angus classes went to Horne Bros., Winsloe Station, P. E. I., without competition.

Grade Beef Cattle

Cow, 4 years old—1, William O'Brien & Sons; 2, E. S. Congdon, Berwick, N. S.

Cow, 3 years old—1, Robert McLeod, Halifax; 2, William O'Brien; 3, E. S. Congdon.

Heifer, 2 years old—1, Robert McLeod; 2, E. S. Congdon.

Heifer, 1 year old—1 and 2, William O'Brien & Sons; 3, E. S. Congdon.

Calf—1, William O'Brien & Sons.

Steer, 3 years old—1, Thomas Aylward; 2 and 4, Robert McLeod; 3, William O'Brien & Sons; 5, E. S. Congdon.

Steer, 2 years old—1 and 2, William O'Brien & Sons; 3, E. S. Congdon.

Steer, 1 year old—1, William O'Brien & Sons; 2, E. S. Congdon.

Steer, calf—1, William O'Brien & Sons.

Herd—1, E. S. Congdon; 2, William O'Brien & Sons.

Fat Cattle

Ox or Steer, 3 years old—1 and 2, Robert McLeod; 3, S. C. Thompson.

Steer, 2 years old—1 and 2, S. C. Thompson; 3, E. S. Congdon.

Steer, 1 year old—1 and 2, S. C. Thompson.

Steer, under 1 year—1, William O'Brien & Sons.

Cow or Heifer, 3 years old—1 and 2, S. C. Thompson.

Heifer, 2 years old—1, J. M. Laird & Son; 2 and 3, S. C. Thompson.

Pair Fat Oxen, over 3 years—1 and 2, S. C. Thompson; 3, Robert McLeod.

Pair Fat Oxen or Steers, under 3 years—1 and 2, S. C. Thompson; 3, E. S. Congdon.

Working Oxen

Pair, 4 years old—1, S. C. Thompson; 2, 3, and 4, Robert McLeod.

Pair, 3 years old—1, Thomas Aylward; 2, Robert McLeod & Co.; 3 and 4, C. S. Congdon.

Pair, 2 years old—1, E. S. Congdon; 2, John C. Horne, Enfield.

DAIRY CATTLE

Ayrshires

Bull, 3 years old—1, McIntyre Bros., Sussex, N. B.; 2, A. McRae & Sons, Charlottetown, P. E. I.

Bull, 2 years old—1, John McDonald & Son,, Shubenacadie.

Bull, junior yearling—1, McIntyre Bros.; 2, John Retson, Truro; 3, John McDonald & Son.

Bull, calf—1, Prescott Blanchard, Truro; 2, A. McRae & Sons; 3, McIntyre Bros.; 4, John Retson.

Dry Cow, 4 years old—1 and 5, Prescott Blanchard; 2 and 4, A. McRae & Sons; 3, John Retson.

Cow, 4 years old—1, A. McRae & Sons; 2, McIntyre Bros.; 3, Prescott Blanchard.

Cow, 3 years old—1 and 4, A. McRae & Sons; 2 and 3, Prescott Blanchard; 5, McIntyre Bros.

Heifer, 2 years old—1, A. McRae & Sons; 2 and 3, Prescott Blanchard; 4 and 5, John McDonald & Son.

Heifer, senior yearling—1, John Retson; 2, John McDonald & Son; 3 and 4, A. McRae & Sons; 5, McIntyre Bros.

Heifer, junior yearling—1, McIntyre Bros.; 2, Prescott Blanchard; 3, John McDonald & Son.

Heifer, calf—1, 2, and 4, McIntyre Bros.; 3, Prescott Blanchard.

Bull and 3 of his get—A. McRae & Sons.

Female and 2 of her progeny—McIntyre Bros.

Aged Herd—1, A. McRae & Sons; 2, McIntyre Bros.; 3, John Retson.

Breeders' Young Herd—1, McIntyre Bros.; 2, Prescott Blanchard; 3, A. McRae & Sons.

Champion Female—A. McRae & Sons.

Champion Bull—McIntyre Bros.

Ayrshire Specials

Four Animals, get of one sire—1,

Prescott Blanchard; 2 and 4, A. McRae & Sons; 3, McIntyre Bros.

Two Animals, progeny of one cow—1 and 5, McIntyre Bros.; 2 and 3, Prescott Blanchard; 4, A. McRae & Sons.

Jerseys

Bull, 3 years old—1, H. S. Pipes & Son, Amherst; 2, Cann Bros., Chegoggin, N. S.; 3, Blake Bros., Shubenacadie.

Bull, 2 years old—1, H. S. Pipes & Son.

Bull, senior yearling—1, H. S. Pipes & Son; 2, Cann Bros.

Bull, junior yearling—1, Cann Bros.; 2 and 3, H. S. Pipes & Son.

Bull, calf—1, H. S. Pipes & Son; 2, Cann Bros.; 3, Thos. C. Latham, Sylvester, N. S.

Dry Cow, 4 years old—1 and 3, H. S. Pipes & Son; 2, Cann Bros.

Cow, 4 years old—1, H. S. Pipes & Son; 2 and 3, Cann Bros.

Cow, 3 years old—1 and 3, Cann Bros.; 2, H. S. Pipes & Son.

Heifer, 2 years old—1 and 3, H. S. Pipes & Son; 2, Cann Bros.

Heifer, senior yearling—1 and 3, H. S. Pipes & Son; 2, Cann Bros.

Heifer, junior yearling—1, Cann Bros.; 2 and 3, H. S. Pipes & Son.

Heifer, calf—1, 2, and 4, H. S. Pipes & Son; 3 and 5, Cann Bros.

Bull and 3 of his get—1, H. S. Pipes & Son; 2, Cann Bros.

Female and 2 of her progeny—1, H. S. Pipes & Son; 2, Cann Bros.

Aged Herd—1, H. S. Pipes & Son; 2, Cann Bros.

Breeders' Young Herd—1 and 3, H. S. Pipes & Son; 2, Cann Bros.

Champion Bull—H. S. Pipes & Son.

Champion Female—H. S. Pipes & Son.

Jersey Specials

Four Animals, get of one sire—1, H. S. Pipes & Son; 2, Cann Bros.

Guernseys

Bull, 3 years old—1 and 2, Howard Corning, Chegoggin; 3, D. G. McKay & Son, Scotsburn.

Bull, 2 years old—1, Roper Bros., Charlottetown.

Bull, senior yearling—1, Roper Bros.; 2, H. Corning.

Bull, junior yearling—1, Roper Bros.; 2, H. Corning; 3, Faulkner & Hill, Great Village.

Bull, calf—1, H. Corning; 2, D. G. McKay & Son; 3, Roper Bros.

Dry Cow, 4 years old—1, Roper Bros.; 2, H. Corning; 3, D. G. McKay & Son.

Cow, 4 years old—1 and 2, H. W. Corning; 3, Roper Bros.; 4, D. G. McKay & Son.

Cow, 3 years old—1 and 3, H. Corning; 2, Roper Bros.

Heifer, 2 years old—1, H. Corning; 2, Roper Bros.; 3, D. G. McKay & Son.

Heifer, senior yearling—1, Roper Bros.; 2 and 4, D. G. McKay & Son; 3, Howard Corning.

Heifer, junior yearling—1 and 4, Howard Corning; 2 and 3, Roper Bros.

Heifer, calf—1, H. Corning; 2 and 3, D. G. McKay & Son; 4, Roper Bros.

Bull and 3 of his get—1, Howard Corning.

Cow and 2 of her offspring—1, Howard Corning.

Aged Herd—1 and 3, Howard Corning; 2, Roper Bros.

Breeders' Young Herd—1, Roper Bros.; 2, H. Corning; 3, D. G. McKay & Son.

Champion Bull—H. Corning.

Champion Female—Roper Bros.

Holsteins

Bull, 3 years old—1, W. M. Lea, Victoria, P. E. I.; 2, Harding Bros., Welsford, N. B.

Bull, 2 years old—1, Harding Bros.; 2, John J. McCabe, Westville.

Bull, senior yearling—1, Harding Bros.; 2, S. Dickie & Son; 3, W. M. Lea.

Bull, junior yearling—1 and 2, W. M. Lea.

Bull, calf—1, W. M. Lea; 2, Harding Bros.; 3, S. Dickie & Son.

Dry Cow, 4 years old—1, 2, and 4, S. Dickie & Son; 3, Harding Bros.

Cow, 4 years old—1 and 3, S. Dickie & Son; 2, W. M. Lea.

Cow, 3 years old—1, W. M. Lea; 2, S. Dickie & Son; 3, Harding Bros.

Heifer, 2 years old—1 and 3, Harding Bros.; 2, S. Dickie & Son.

Heifer, senior yearling—1, W. M. Lea; 2, S. Dickie & Son; 3, Harding Bros.

Heifer, junior yearling—1 and 3, W. M. Lea; 2, Harding Bros.

Heifer, calf—1 and 3, S. Dickie & Son; 2 and 4, Harding Bros.; 5, W. M. Lea.

Bull and 3 of his get—1, W. M. Lea.

(Continued on page 800)

"Make Plenty of Jelly this Year"

Children must have sweets and the most wholesome and economical sweets you can provide for them and for the whole family are delicious home-made preserves and jellies made with

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DAIRYING.

A SIMPLE MOISTURE TEST

If the dairy farmer who sells butter desires to get all the profit that is rightly his, he should have a moisture test for ascertaining the percentage of water in his product. He can worry along without a Babcock test if he is not buying cream, but if he is selling butter he should have a moisture test, because without it he does not know whether he is selling butter low in moisture and losing money, or selling butter too high in moisture and violating the internal revenue laws.

After using various tests the writer has come to the conclusion that the simpler the test the better, especially for the average dairyman. The expert butter maker with a laboratory training can putter around with chemicals and can take time to make corrections for temperatures, but the average dairyman wants a test that will give accurate results in round figures quickly and easily.

Such a test can be purchased at most any hardware store or dairy supply house. Get a good pair of balances that will weigh grams, and a set of weights. Get a small aluminum cup that will set comfortably on the pans of the scale. Then get a small alcohol burner ,and the home-made test is ready for business.

Be sure to get a representative sample of the butter to be tested. A good way is to take some from different parts of the churn and carefully mix it. Weigh out a small quantity—ten grams is the best to work with. Use your pocket knife to secure the sample and to work it down to ten grams. It will seem quite a task at first to get just that weight, but practice will make it easy. You can whittle down a piece of lead to balance the cup, which will save the trouble of fooling with the tiny weights. It will be found necessary to scour the bottom of the cup frequently and to reweigh it occasionally.

Having secured the ten grams of butter, light the alcohol burner. Twist a piece of heavy paper around the cup for a holder, and slowly melt the butter over the blaze. Do not hurry. Haste causes the melting butter to boil over. After it has quit bubbling, or crackling, it may be allowed to turn slightly brown. By that time the moisture has all evaporated. If you wish to be sure, and want to appear scientific, hold a small mirror over the mouth of the cup. If moisture is still escaping it will collect on the cold mirror.

When the moisture is all evaporated, weigh the melted butter. A collegian will tell you that the butter should be cooled to the original temperature first. Well, it does make a difference, but you cannot note it on an ordinary pair of balances, and even when detected with a fine set of laboratory scales it seldom figures more than one-hundredth of one per cent.

What is the weight of the cup of melted butter? Subtract that from the original weight. Divide the difference by the ten grams, and the quotient, multiplied by 100, to express in terms of percentage, will give the per cent of moisture in your butter. For example: Say the cup weighs 8 grams, you put in 10 grams of butter, making the gross weight 18 grams. You weigh the residue, and find it to be 16.50 grams. Subtract that from 18 and it shows that one and one-half grams of moisture evaporated. Divide that by your original ten grams of butter, and you see that figures 15 per cent. The government forbids the sale of butter containing 16 per cent or more.

A moisture test such as the above can be operated by any one.—L. L. Le Bra.

FEEDING AT A PROFIT

The law of diminishing returns applies nowhere more truly than in the feeding of dairy cattle.

The more food eaten and digested the greater the flow of milk, is an infallible rule in dairying. But there is a point where the increase of milk will not be sufficient to defray the cost of the extra food. This point depends entirely upon the relative cost of the feed as compared with the market value of the milk, cream, butter, or cheese.

Thus it follows that if a farmer feeds all his herd alike, irrespective of their capacities for producing, he is bound to suffer considerable loss. The cow's capacity for producing milk is limited. It is doubtful if a maximum yield of milk is ever profitable from all the individuals of an average herd.

The liberal use of concentrated foods will increase the flow of milk, but it will not convert a bad milker into a good one.

But it generally pays to give a good milker a reasonable amount of cake and meal. Unless such an animal is well fed she will "milk herself away." The quantity of such feed should be determined and regulated by the yield of milk, the heavy milkers getting an extra supply.

Thus in the feeding of milch cows for profit the law of diminishing returns should always be kept in mind. If an accurate record is kept of the milk of each cow, and its butter fat content known, little trouble will be experienced in gauging the feed so that a maximum of profit may be gained from the herd.

WHERE TO GET GOOD COWS

This country needs more and better cows. That is the exclamation of dairymen, but they say to themselves: "Where can I get some good cows?"

The best place to get them is right at home. Use the cows already on the place to produce animals to carry on the business. Sell fewer heifer calves for veal, is the best system to get more cows to produce milk.

That too many heifer calves are being sold is a known fact. The high prices paid for vealers has been too tempting for owners, and they have been in the habit of cashing as soon as the calf arrives at the lawful age. This practice has been suicidal to a certain extent, as many grade bred calves have been sacrificed by owners who wanted milk at the time and also the high prides that vealers were

Make More Money From Your Cows

If you are still skimming cream by the old pan or can method you are not making nearly enough money from your cows. By using the

Standard

Cream Separator you can get $15.00 more profit annually from each cow in your herd. If you have 20 cows that means an increased profit of $300.—more than enough to pay for the Standard four times over.

The Standard gets all the cream—at least, it loses but one-tenth of a pound in every 1,000 lbs. of milk skimmed. Ordinary separators lose from a half to a full pound. Government Dairy School records substantiate our statements of the Standard's close skimming.

Not only does the Standard skim close, but it gives you the cream in the best condition. Thanks to its **curved wing** centrepiece the milk is distributed to the discs without "whipping" or slapping it and breaking up the globules of butter fat as the ordinary straight wings do. Good firm butter can therefore be made from the unwhipped cream skimmed by the Standard. Such butter brings the highest price.

The Standard is easily turned, too. It runs in a bath of oil, every gear and bearing being automatically sprayed all the time the machine is in motion. By removing the used oil from the reservoir every two and three months and filling it up with coal oil, the driving mechanism can also be automatically cleaned.

Another splendid feature of the Standard Cream Separator is its interchangeable capacity. The Standard is now built with one frame for all sizes of bowls. To change the capacity of the machine all that is necessary is to change the bowl and skimmers. If a man increases the size of his herd he can increase the capacity of his Standard at a very small expense.

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The Standard is the up-to-date machine. It is the BIG value machine. It is the BIG profit-earner for the dairyman. Let us send you a Standard so you can see it at work in your own dairy, or have it tested alongside any other separator, we care not what make.

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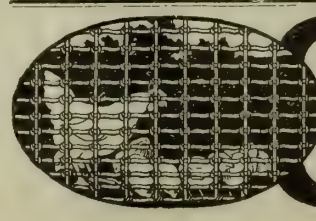

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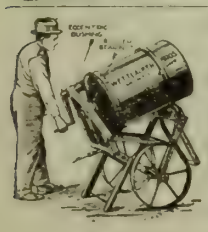

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bringing at the market.

When the old cows give out they are then stumped as to where they can get more to take their places. Dairymen of this country are good business men and they should use their ability to an extent whereby they can always have a good supply of cows on hand. It is well enough to sell off the bull calves, but more of the heifers should be kept for future use.

To get a right start in this practice is necessary. A good sire is the main essential. After the calf is born it needs warm milk for two or three weeks. It should run with the mother during this time. After that it can be kept on skim milk and calf meal and kept growing at an economical cost if necessary. The owner loses the use of the mother cow for only a short while and before a very long period has elaused the calf can be run on grass.

After the calves are on grass the time is not long slipping around until the heifers are ready to be bred and produce milk. They then will be paying dividends on the investment. It is said that ninety per cent of the heifer calves with the right breeding will mature into good cows. With proper breeding a man should be able to produce a cow that will be at least as good as the mother, and he will have an animal to be proud of. A man thinks more of an animal that he raises himself than one he purchases. He should, as he knows what he has from the start. By doing this he is protecting his future and keeping up his reputation as a producer. If this practice was carried on more generally there would be fewer men wondering where they were going to get cows to take the place of those that have become dried out.—J. M. C.

MAKING A REPUTATION

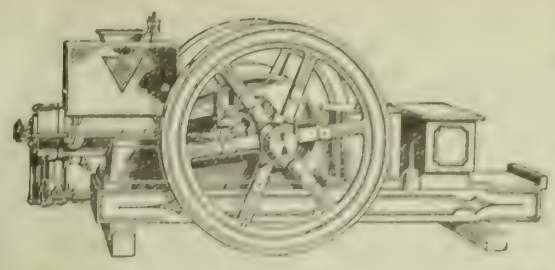
Charles M. Schwab, well known in the world of steel and finance, is quoted as having said: "If you want anything well done in life, don't engage a man of great reputation to do it. Get a man who has his reputation to make; he will give you his very best individual undivided effort."

While this is but the opinion of one man, there is much of truth in it. Apply the idea to dairying—to testing—to the cow, for instance. What are breeders striving most for? Reputation, naturally. One cow is developed and her possible standing brought out in the course of time. Then another, and another, and so on. Each animal reaches the pinnacle of its ability, each being a step in the development of a reputation.

The lesson suggested by the above quotation, applied to cows, shows untold possibilities. Think of the thousands of cows undeveloped, untested, just being "kept," and held only at ordinary value because they have not been given a chance to demonstrate their true value, which may be worth double, treble, or quadruple their present value. Undoubtedly there is a cow or two in every registered herd in the country, where testing is not done, which, were they tested, would add greatly to the owner's reputation, afford him more satisfaction in life, and make him better off financially. Grasp the opportunity at your very door. Give the untried cow a chance, and see what she will do for you. The results may be pleasingly surprising. Better try and lose than to do nothing.

On any well-regulated dairy farm the milking of the cows at a stated period is never neglected. Don't neglect the source of income.

Did you ever notice that cows suffer from homesickness? Don't you think you have been cheated if the newly purchased cow falls away in her milk flow for a few days.



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LIVE STOCK.

THE CORRECT AGE TO BREED THE HEIFER

This is a subject on which the majority of farmers are, as a rule, somewhat in doubt, but one which bears very great importance on the size, production, type, and utility of the dairy or beef herds. Never more than now have our markets demanded large, capacious breeding stock of good type, quality, and high production; yet many farmers persist in using methods of breeding and rearing least conducive to such achievements. Again, the high prices offered for milk- veal, and beef in face of very high prices of feeds tempt farmers to make the errors of poor rearing of young stock and breeding at a too early age, with resulting deterioration of the size and production of the herds.

No hard and fast rules can be made in this regard, for practices must vary with the breed, size of foundation animals, character of feeds and pastures available, weather conditions, markets, and many similar influencing factors. It is the purpose of this brief resume of the subject to deal with its most outstanding phases as applied to dairy cattle, though the same principles will with a few slight variations apply equally well to the beef herd.

As breeders of dairy cattle, we must admit that, within reasonable limits of each breed, the larger cow, able to handle more feed, particularly the cheap farm-grown roughages, is the most profitable animal. The most of us must work with herds of grade cows, and as our aim is to develop such herds to show as nearly as possible the same type and profits as the pure breds, the bull of which we are using, hence we face this problem to the same degree as the breeder of pure-bred stock.

Influence of Rearing

It is extremely doubtful if the small, half-starved, permanently runted yearlings, all too commonly found, can ever become profitable cows at whatever age when first bred. Surely Canadian farmers have sufficient ability to realize the correctness of and practice the following principles:

1. Rear only good, thrifty, typey calves.

2. Raise calves from only good cows which can show a good profit.

3. Raise calves only from a good pure-bred sire.

4. Rear these calves well to develop into more valuable and profitable animals than their dams.

Any deviation from these four principles means proportional financial loss. Without proper feeding while the heifer is young she cannot hope to reach maximum size, value, or production when mature. Good rearing is then the foundation of profitable and successful breeding. Many excellent articles on the feeding of calves and yearlings appearing from time to time in this journal should be an excellent guide to the feeder.

Influence of Age at First Calving on the Size of the Mature Cow

Much carefully compiled data on this subject from breeding records of the Dominion Experimental Farms has been collected, and many experiments are still in progress. Two points well demonstrated in the past are:

1. Heifers well reared by good feeding reach mature weight and production much sooner than when less generously fed while young.

2. Good rearing will result in a cow weighing from 300 to 500 lbs. more than fair or poor rearing; this incresae in weight representing greater frame and muscle; in other words, a stronger, more durable, greater capacity machine for milk production.

The relationship of rearing to age of first service is as follows:

1. If the feder finds it most profitable to force the calves to good size at an early age with good feeding, the heifer may be bred at from 17 to 20 months of age, to calve at 26 to 29 months of age.

2. Under such conditions heifers must not be overloaded with fat at any time, else difficulty will be met with getting them to hold to the bull.

3. Where weather and feed conditions warrant slower growing and maturing, heifers should not be bred until 24 to 27 months of age, to calve at 33 to 36 months of age. Even then they must have been sufficiently well nourished to gain good size before breeding. When conditions exist, such as in Scotland, and the heifers grow well on excellent pastures all summer and with light stable feeding run out to the fields the most of the winter, such animals may be brought most cheaply to good size at first calving by this method. However, where severe winters necessitate closer confinement, mor rapid growth by better winter feeding will almost invariably pay, and the heifer may reach maturity in size and production most quickly.

The well-grown heifer, bred to calve first between the ages of 26 and 30 months, will, if properly bred, produce well from the start, and will reach mature weight and production at from 5 to 6 years of age.

The slower-grown heifer bred to calve first between the ages of 30 to 36 months, may, if properly handled, reach the same mature weight and production as the above, but will do so at a later age.

The poorly grown heifers bred to calve first at under 30 months of age will probably continue to increase in weight and production till 7 years of age, but will never reach desired size or be as profitable producers as though better handled. Unfortunately the majority of dairy cows and heifers in Canada come in this class, and it is little wonder that the average production per cow per year is only a little over 3,000 lbs. milk, or that such a very high percentage of our cows give annually produce worth less than the feed consumed.

There may be rare instances when heifers or bulls bred from exceptionally large and coarse parents may show this characteristic intensified. Breeding such heifers to calve at 24 or even 22 months of age may add refinement and induce greater milk production. However, instances are so extremely rare that it is safe to make the rule that no heifers should calve for the first time under 26 months, and the majority not under 28 months of age.

The foregoing range of ages makes allowance for different breeds. It is well known that naturally such breeds as the Jersey reach maturity in weight and production earlier than the other breeds, that the Holstein represents the intermediate, and the Ayrshire the later maturing breeds. There is little doubt that all dairy breeds and grades of the same in Canada have a very high percentage of males and females lacking in both size and constitution and the above principles apply equally to all.

Age at First Calving vs. Production

Generally speaking, within reasonable limits, the inherited tendency to a production of milk is a greater factor than the size of the cow. However, with the same breeding and general type the larger cows will, as a rule, produce most milk, and are undoubtedly capable of manufacturing larger amounts of rough forage into milk most easily and with a resulting increased profit. Hence the heifers calving when sufficiently mature (approximately 30 months) have a decided advantage over immature females at that stage and throughout the rest of their lives.

Age of First Calving vs. Dairy Type

Heifers calving young, i.e., 24 months or under, are undoubtedly taught to produce at an early age, and will carry this refinement through life. However, the strong tendency in this practice is to greatly reduce the size, constitution, and general ruggedness, thus lessening the capacity for consumption and production, and with a tendency toward fewer years of most efficient production.

Well-grown, heavily fed heifers calving at the age of 26 to 30 months, or well-grown, slow,developed heifers calving at the age of 30 to 36 months will not acquire the same degree of dairy refinement until a year later than the foregoing class, but even so will produce more heavily than the smaller, less rugged animal. When refinement does come then we have the cow of size, dairy type and quality, which is our greatest and most profitable producer.

A word of caution in this regard may not be amiss. Occasionally a breeder carries late calving to the extreme, and by so doing induces coarseness and wealth of flesh which in many heifers will not milk off, and this habit of laying on flesh at the expense of milk production be too well established to overcome. Again, nonpregnant late two-year and young three-year heifers even on rough feed lay on flesh very quickly, are difficult to settle with calf, and sometimes slip at the pin bones and become steery and sterile, or partly sterile. This probably only happens with heifers having the least maternal instinct with resulting tendencies to light production, but it is a risk worth guarding against.

Age at First Calving vs. Size of Calf

This is a phase of the subject on which little data have been collected. The writer is convinced that the smaller and younger the heifer is at first calving, the smaller will be the first calf, other things such as sire of calf, feeding of heifer during pregnancy, etc., being equal. Well-reared, good-sized heifers will produce good-sized, thrifty, valuable calves. Is this not the explanation of the strong prejudice against a heifer's first calf, which is usually all too small and weak? Good rearing, breeding at the right age, and proper feeding during first pregnancy would quickly overcome this difficulty.

Summary

1. The age at which heifers should first calve is important, but is dependent on other factors of equal importance.

2. Sufficient size must be obtained before first pregnancy, else the cow will never acquire desired size, capacity, and strength.

3. The heifer calving for the first time, if small or very young, may show extra refinement, but never the constitution or capacity for work as though better developed at that time.

4. Calving heifers at 28 to 32 months of age is a good average, but should be varied with discreition.

5. The proper rearing of heifers to the first service, the feeding of the pregnant heifer, and the feeding and management of the heifer in milk are all practices of equal importance, each bearing on this important subject, and all going to make the most profitable rearing of the best dairy cow.—Prof. E. S. Archibald.

PORK FROM RAPE PASTURE

Hog pastures are a variable factor. Their returns vary from a heavy crop of weeds to a net profit of $100 an acre, or even more. While their importance is now generally recognized, many hog raisers do not give them the attention they merit. Pasture is the pig's laboratory for producing profit, but results depend on the kind of equipment provided and the material supplied for its use. As the owner or operator controls both these factors, it falls to the man outside the fence to make his pigs pay as they should.

Profitable pork production on pasture requires grain feeding—the providing of some concentrated feed in addition to the pasture. While grain feeding in any degree may be out of the question for many farmers this year, the outlook certainly is promising for the man who opens the granary door with a generous hand during this summer. For the northern farm rape is one of our best all-around pastures, probably surpassing clover and alfalfa in some respects.

An experiment at the Minnesota Station last year is of interest. It gives definite results from rape pastures and also furnishes an excellent example of the importance of liberal grain feeding even on the best of pasture. Three lots of pigs were fed 77 days (July 10 to September 26). In connection with rape pasture, 2 per cent, 3 per cent, and 4 per cent of shelled corn rations were used. Water and salt were available. The pigs averaged practically 50 lbs. each at the outset. At the close the 2 per cent lot averaged 97.88 lbs., the 3 per cent lot 113.43 pounds, and the 4 per cent lot 121 lbs. The daily gains were .61, .84, and .93 lbs. per big. The 2 per cent pigs ate 2 bushels of shelled corn each, the 3 per cent pigs 3.18 bushels each, and the 4 per cent pigs 4.16 bushels each. Comparing the 2 per cent and 4 per cent rations, it appears that the extra 2.16 bushels of corn eaten by each pig on the heavy ration produced 23.12 lbs. of pork, and at the same time saved over 30 days' time for the pig.

The real test of any farm operation is the net return per acre of ground employed. Figuring corn at 75 cents per bushel, and hogs at 7 cents per lb. the gains would have paid for all corn eaten and left a margin of $26.95 per acre of pasture on the 2 per cent ration, $42.84 on the 3 per cent ration, and $57 on the 4 per cent ration. If hogs be 9 cents per pound these margins would become respectively $41.10, $68.90, and $100.08 per acre. This assumes that the pig owes nothing when it weighs 50 pounds.

Charging pasture at $10 per acre, corn at 75 cents, and hogs at 7 cents, the total margin per pig, above the cost of feed, was $1.11 on the 2 per cent ration, $1.64 on the 3 per cent ration, and $1.57 on the 4 per cent ration. The larger margin on the 3 per cent pigs was due to their smaller corn consumption (3.18 bushels against 4.16 bushels in the 4 per cent lot). However, they consumed more pasture, and for that reason the 4 per cent ration shows a higher margin per acre. Pigs were carried at the rate of 15 per acre on the 2 per cent ration, 20 per acre on the 3 per cent ration, and 30 per acre on the 4 per cent ration. While only 6 pigs were available for each lot, their uniformity in all respects throughout the test indicates that later tests under the same conditions will give similar results.

With charges as given, the actual feed cost of gains was $4.60 per cwt. on the 2 per cent ration, $4.46 on the 3 per cent ration, and $4.81 on the 4 per cent ration. Similar gains in dry lot (weight 50 to 115 pounds) at the same time cost $5.91 per cwt. with corn at 75 cents, shorts at $26, and tankage at $55 per ton. Like gains in winter with feed prices the same cost from $6.38 to $6.57 per cwt. Of course corn usually is much cheaper in early winter. Self-feeding the corn would doubtless have shown considerably larger margins than did the 4 per cent ration. Moreover, the average farm will furnish at least 3 weeks more pasture than was utilized in this test. For hogging off corn or going behind steers the 4 per cent pigs would have been preferred by most feeders. Their extra 23 pounds would prove a decided advantage in either place. While they were fatter than the other lots, they

were not too fat for excellent results under either system. Both in profit and in satisfaction there is a vast difference between an outside yard under fence and a first-class hog pasture. A few weighings will tell the tale. Why not inaugurate a series of pasture demonstrations under the direction of the county agents and agricultural instructors?—R. C. Ashby, University of Minnesota.

Editor's Note: Rape grows well in the Maritime Provinces.

THE NEED OF PURE BRED CATTLE

In any enterprise it is always good business policy to take an inventory, to ascertain what is on hand.

I might read to you the numbers of living registered animals of the several dairy breeds which are owned in this country and in other dairy sections of the globe; but large numbers are grasped with difficulty. Permit me to say, therefore, that we have living in the United States at the present time ten times as many registered Guernseys as there are Guernseys on Guernsey Island; sixteen times as many registered Jerseys as there are on Jersey Island; and seventeen times as many registered Holstein-Friesians as there are in the province of Friesland. But even with this "lion's share" if we were to bring all of our living registered Holstein-Friesians now in the United States, and along with them all the living registered members of the other dairy breeds, into the state of Michigan, and discard an equal number of our common or grade dairy cows and scrub bulls, Michigan would still have only two-thirds of her dairy animals pure bred, and there would not be a single pure-bred dairy cow left in the United States outside the boundary lines of this state.

Further, as though not content with this feat, if we were to go to the four corners of the earth and collect all the pure-bred dairy cattle of all the dairy breeds, we could stow them away in a similar manner in any one of our fairly prominent dairy states.

The business of supplying the world with suitable dairy cattle is still in its youthful stages. The sun of dairy progress is scarcely above the eastern horizon. The period of our accomplishment stretches ahead into far centuries. Proceed, I pray you, with the confidence and zeal born of faith. Granting that your business, like every other, may occasionally be affected by the general condition of the world's finances, yet, being assured that the produce of your herds and the ripe fruit of your toil, your judgments—yes, of your very souls—will always receive due consideration and merited recompense at the hands of your fellow countrymen.—Prof. E. C. Anderson, in Black and White Record.

DRESSING PERCENTAGE IN FAT

The average dressing percentage of hogs is 75, while of cattle it is 53, and of sheep 48. Part of this difference is due to the method of figuring. In the case of the hog the hide, head, and feet are included in the carcass weight, while in the case of cattle and sheep the head, hide, and feet are not included. Then the hog is very thick fleshed and has a small digestive system. Cattle and sheep have large paunches and digestive systems. Sheep dress out lowest, due to the wool and the rather light fleshing of the carcass. The dressing per centage of animals of each class varies widely. This is due to the amount of flesh, especially fat, present on the carcass, and somewhat to the thickness of the hide and size of the heads and legs, and to the amount of fill or the amount of feed and water present in the digestive tract at the time of slaughtering. In hogs the dressing percentage varies from 65 to 85 per cent, with an average of 75. In cattle it ranges from 48 to 70 per cent, with an average of 53, and for sheep from 44 to 56 per cent, with an average of 48 per cent.

INTERESTING RECORDS AMONGST DAIRY COWS, SHOWING THAT LIKE DOES NOT ALWAYS PRODUCE LIKE

There is one factor which makes all breeding more or less a gamble: Like does not always produce like. This unfortunate situation is in a measure compensated for by the fact that the variation is sometimes for the better. Modest parents have been made famous by brilliant sons and daughters, while it is undoubtedly true that some of the high-priced breeding stock are not reproducing themselves.

The Guernsey Advanced Register offers some carefully tabulated production records. The list of high producing dams published in the May issue of the Guernsey Journal includes cows with two or more A. R. daughters. We find that there are 289 of these dams which have A. R. records of their own. Therefore these 289 A. R. dams which have 612 A. R. daughters represent two generations with accurate production records.

The average butter fat of the 289 dams is a little below 450 lbs.; 151 tests are below that mark and 138 are above it. If we remember that A. R. butter fat production is an abnormal function in cows as compared with the butter fat production in the ancestral stock we will expect the drag of the race to lower the average production in the daughters. In this case the daughters average more than 25 lbs. below their dams. Out of 612 daughters 331 are below 425 lbs., and 281 are above that mark. Therefore the halfway line is about 412½, with 306 above and 306 below. For comparison we may use these averages as halfway lines, designating the dams below 450 lbs. as low test dams, those above 450 as high test dams; and likewise with the daughters, those below 412½ lbs. we may call low test daughters and those above 412½ we may call high test daughters.

The dams with high records have practically the same ratio of tested daughters as the low test dams—a fact sometimes denied by skeptical critics of high test cows. Of the 612 daughters, 318 are out of the 151 low test dams and 294 are out of the 138 high test dams.

The real comparison of the dams and their daughters is arrived at by arranging the dams according to their tests in a perpendicular column and tabulating their daughters according to test in horizontal columns opposite each of these groups. In order to do this we must disregard odd pounds, decimals, and age. Let the cows be grouped in classes of 250 lbs., 300 and under 325, 350 and so on. For instance, in the 350 lb. group of dams there are 23 dams with the following daughters: 4 at 275, 7 at 300, 2 at 325, 9 at 350, 3 at 375, 2 at 400, 5 at 425, 1 at 450, 2 at 475, 4 at 500, 2 at 525, 1 at 600, 1 at 625, 2 at 700, totalling 27 low test daughters and 20 high test daughters. From these totals for all classes we find that the low test dams produced approximately 186 low test daughters and 133 high test daughters. The high test dams produced about 120 low test daughters and 173 high test daughters. In this group of 289 dams those with records above 450 lbs. produced 18 daughters under the average for every 13 above the average. Inversively, the dams below the average produced about 10 low test daughters for every 13 high test daughters.

This evidence indicates that cows with only moderate records will produce relatively low record daughters more than half the time. High test dams will produce high test daughters more than half the time. The ratio in this case is about 18:13 and 13:18.

The most significant fact about the whole comparison from the standpoint of breed advancement is that 173 high test daughters out of the high test dams include the very highest producers from among all the daughters. The 173 high test daughters out of high test dams when compared with the 133 high test daughters out of the low test dams are aehad not only in numbers but in "toppers." Of the 173 high test daughters there are 15 with records above 725 lbs., as compared with one such record from among the 13 high test daughters from the low test dams, and, furthermore, there are only 7 dams with 725-lb. records. Many more worthy cows will shortly be proven deserving a place with these 173 high test daughters out of high test dams. That ought to be a class prized and honored more than any other group of winners because they have proven themselves to be in the blood line of breed ascent. There probably always will be the outstanding individuals in many inconspicuous families, but the inertia of the produce from these 173 ought to carry the breed forward.

This bit of breed history illustrates one or two general laws which probably apply to all grain and live stock breeding:

The average production of the daughters is below the average production of the parents.

The poorer half of the dams produce more than their share of the low producers.

The better half of the dams produce more than their share of high producers. In this case the ratio is about 18:13.

The produce of the better half of the dams includes the very best daughters, showing a marked tendency to advance the upper limit of the breed.—Chas. D. Kirkpatrick, in Hoard's Dairyman.

GROW MORE WOOL AND LESS WEEDS

Sheep were the first animals domesticated by man. They were pre-eminently adapted to grazing purposes. This has led to the belief that sheep belong only to rough frontier country. English farmers have demonstrated the fallacy of this belief by making sheep the most profitable farm animals under intensive farming conditions.

The sheep, like the dairy cow, gives two returns annually. The fleece easily pays for the cost of feed and care for a whole year. The product in lambs becomes clear gain. The increase may be as high as 150 per cent, and no meat can be placed on the market with so little grain as mutton.

In figuring the returns from sheep the lambs and wool are not the only legitimate sources of profit. Sheep are continuously at war with weeds of all kinds. Only when they lie down together—with the weed inside—is there peace. It is impossible to place a money value on this service which they render.

Cattle pastures are becoming more weedy each year. Such pastures judiciously grazed by sheep would soon not only support the sheep but would support additional cattle as well.

Wherever sheep graze the land becomes more fertile and productive. Truly "the sheep has a golden hoof."—G. C. W.

THE AGE OF THE HERD BULL

A vigorous bull of any age is all right, but unless a big outlay for the purchase price is expected a young bull will most likely have to be selected. When a breeder matures a bull and tries out his breeding qualities he is inclined to keep him if satisfactory results have been obtained. If not, he should be sent to the butcher or sold to some breeder of grade cattle for getting good steers. But he is not the bull to use in a pure-bred herd. To be sure, if one can find a bull whose calves can be seen, and if they are of such quality as to prove beyond doubt that this is a successful sire and is being sold for no fault, it will be much better to purchase him than to run the risks in getting a young bull and trying him out in the herd. But the general rule will be to buy a yearling or maybe a calf, develop him by using him on the herd while he is growing. By the time he is perhaps 30 or 36 months old one can find out what kind of sire he is likely to be. One will have the opportunity of seeing his sire and dam, and perhaps other of the ancestors contained in the top of his pedigree. Remember that this top part of the pedigree is the most important part by far. With a young bull there is the advantage of having his entire life before him, so if one is fortunate enough to get as good a breeder as when buying the tried sire he will have a longer period of usefulness and will cost less money, too. His period of usefulness should last until he is 10 or 12 years old, and he should get just as good calves until he reaches this period in his life. I think it is a mistake to breed to a bull after he begins to weaken physically, and it is surely a great mistake to purchase one to use after he is broken down. A really excellent breeding bull is rarely on the market after he has made his mark, and the only way to get one is to buy when he is young, develop him, and run the risk of his breeding qualities. Unusual precautions should be taken in his selection, as much depends on his future.—Breeders' Gazette.

DON'T FORGET THE FARM DON'TS

Don't forget that flock of sheep. If given half a chance they will return more clear profit than any branch of farming you can engage in.

Don't forget to give the stock plenty of water. Water is as essential as feed.

Don't forget that a good cream separator is a valuable machine to have on any farm on which there are two or more cows.

Don't forget to shelter your machinery when you are done with it. Under a tree or in a fence corner is a very poor place to leave a machine. Rust and decay ruin a machine sooner than use.

Don't forget that a small gasoline engine will do small jobs more quickly and easily than you can do them.

Don't forget to use plenty of good oil on any machine you use. Oil reduces friction and friction means wear. A properly oiled machine will run longer and easier than a poorly oiled one. Oil is cheaper than new machinery or repairs.

Don't forget to see that your tires are properly inflated before you run your car. Too much pressure is likely to cause the tire to stretch or blow out, while too little pressure will cause rim cuts and the tire walls to crack.

Don't forget that an open well or cistern, or one with a poor top on it, or one close to a barn or cesspool, is a source of never-ending danger.

Don't forget that every weed which is allowed to go to seed means several weeds next year.

Don't forget the birds. If you will be a friend to them they will be both friend and helper to you.—A. L. H.

Three things will insure success on the average farm, namely: Cows, Alfalfa, and Cream Checks. If a farmer gets the first two and looks after them properly the last will come naturally.

Prof. H. Barton, of Macdonald College, Quebec, Canada, has accepted the appointment as judge of the Milking Shorthorns at the International Live Stock Exposition, Chicago, December 2-9.

The attendance at the Halifax Exhibition rolled up a total of 70,000 people during the eight days of the fair.

THE HORSE

A POINT ON HORSE JUDGING

Equilibrium means equally distributed weight or equipoise, but the average horseman does not have that in mind when he speaks of weight. He merely means "heft," as he sometimes calls it, and judges by the weight how a horse has developed and what he thinks will be his capacity for labor. The true student sees much more in the matter than that, and so we shall say something about it for the farm boys that they may better understand the subject. One seldom, if ever, hears the weight of a draft horse or light horse quoted in Great Britain or France, where horses have been so successfully produced.

To understand the significance of equilibrium in a horse it is necessary to know what "center of gravity" and "line of gravitation" mean, and where the former is located in the body. Without going into a very elaborate or scientific definition, let it be said that center of gravity means the point upon which a mass will balance, where all of the forces of gravity center, and where the forces destroy or annul one another so that the mass is at rest. The line of gravitation is that through which the force of gravity falls from t he center of gravity to the ground. If the center of gravity of the horse is known, then a plumb line dropped from there to the ground follows the line of gravitation.

The student will find that the center of gravity of the horse is located just behind the eighth rib, near to the elbow joint, and on a line drawn from the point of the shoulder to about the middle of the thigh. The exact point is found by intersecting this line with one dropped perpendicularly to the ground at the eighth rib. That means that the center of gravity is in the middle of the mass of the body just back of the elbow, or at and above the end of the back of the sternum of breast bone. Theoretically the horse would balanc on a point at the center of gravity and be at equilibrium or in equipoise.

Next remember that the base of support of a horse is formed of four broken columns (bones and joints) resting upon points which are the feet. These four feet when joined by an imaginary line form a rectangle or polygon, and if that were permanent the horse always would be in equilibrium; but the moment he moves a foot the equilibrium changes or is affected. When a horse trots he advances one hind foot and one fore foot diagonally and so is balanced on two diagonal bipeds. When he paces he moves by lateral bipeds, or two feet on the same side of the body, the other two (lateral bipeds) being off the ground at that time. It may readily be seen that the horse may also be balanced or supported on only one foot at certain times, or on two hind ones when rearing, or two fore one when landing from a jump, or may have no feet upon the ground for a moment when galloping. Equilibrium, therefore, will depend on what the motion happens to be. It is greatest when the horse is lying down, because the center of gravity is near the ground and the line of gravitation within the base of support. It is lessened when the horse rises, and the taller he is and the closer the feet are together the less will be the equilibrium.

If a horse always were in a state of rest one might make exact statements about the subject of center of gravity and line of gravitation, but remember that he is constantly moving. Each time the head is raised or lowered, or any change made in position of the body, equilibrium changes, is lessened or increased, wittingly or unwittingly, and may suddenly be thrown out of control so that the animal falls. The rule to remember is that for equilibrium the line of gravitation always should fall inside of the base of support. Whenever that is not the case the horse must move quickly to avoid falling. Changes of the line of gravitation forward within the base of support take place when the running horse advances and elevates his head, and such a change necessitates fast movements of the legs to prevent falling. Such changes are not so dangerous as those outside of the base of support to the side, for when the latter occur it is more difficult for the legs to be moved to the side to support the body than when the legs have to be advanced for that purpose. Knowing this, one should be very careful to avoid side slips when riding or driving a horse. Never turn a galloping horse quickly, nor when galloping or trotting on a cement road turn the horse suddenly to enter another street or alley. Falls readily occur at such turns and bones may be fractured. The writer once had a fine saddle horse killed by just such a foolish turn made by the groom. The animal suffered a broken back and leg by the consequent fall.

Understanding the matters we have touched upon here, the scientist alleges that "instability of equilibrium gives the measure of speed," and that is correct. There is no speed when the horse stands still. The greater the changes in the position of the line of gravitation outside of the base of support the faster will the legs have to be moved to avoid a fall. For this reason the running horse goes at a tremendous rate, for he advances his long neck, on the end of which there is a heavy head, and in so doing the center of gravity is advanced far ahead of the base of support formed by the two fore and two hind legs in their normal position. The horse in consequence has simply to chase forward to get his legs or feet under his weight, and thus avoid a fall.

The draft horse, on the other hand, does not have to move fast, but has to move a great weight, and so when he goes to start a load he lowers his head, brings it back to his chest, crouches his body, crooks his hind legs at the hocks, gets a grip on the ground with his toes, and then straightens out his hocks by action of the great muscles of his hind quarters and loin. He lowers the center of gravity, increases equilibrium, and takes full advantage of his stability and strength. Weight also enters into the proposition in holding him down and giving him the full advantage of his great muscles.

Take these matters into consideration when judging or buying horses, and the estimate of the value of the horse will be more correct than ordinarily is the case.'—A. S. A.

STARTING A BALKY HORSE

Of all vices that equine flesh is heir to, the most annoying to the average horse owner and driver is balking, or near balking, which consists in rearing or plunging when first asked to start, particularly after a few days' rest; or, what is still worse, trying to start with a jump when only half hitched. The main reason that I think it is so aggravating is that so few know how to combat it. A balky horse has the most sense, the confirmed runaway the least, of any horse.

I have bought more balky horses than those with any other vice for that reason. Once they are broken of balking, they make the best of horses, not afraid of the objects that usually scare those of other temperaments.

The little simple trick I am going to describe, and that has proved so satisfactory in so many cases, is not intended to break the horse of balking, which in most cases involves a lot of time, patience, and more or less thorough knowledge of horse nature, but rather to help those who have been caught, perhaps with a new horse that started away from home all right but has now balked because the conditions under which he has balked before have again presented themselves.

The average driver, when caught in this way, starts in by petting and coaxing the horse, and winds up by losing his temper and beating it until stopped by passers-by or some policeman.

A horse has only one idea in his head at a time, and in this case he has decided not to go any farther with that particular load, and the coaxing and patting are not sufficient to cause him to think o anything else. The whipping only makes him more stubborn and determined not to move. Now we have got to find something that will give him something else to think about.

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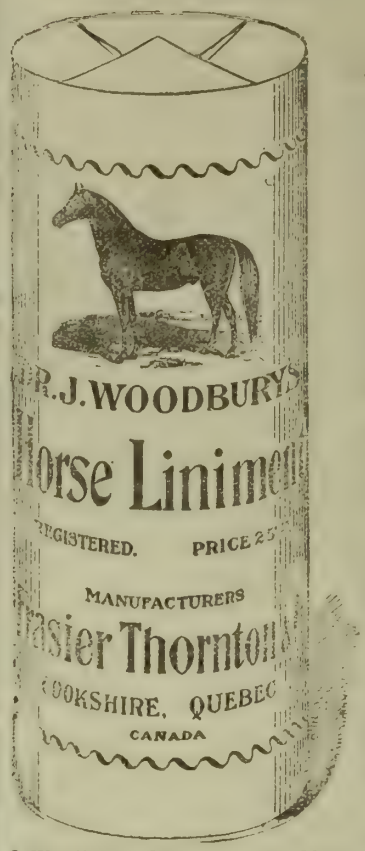

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
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Yours truly, C. C. McLean.

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This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
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Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

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Mrs. R. F. Catlin, Elm Springs, Sask., writes: "For years I was troubled with nervousness, and could not sleep nights. Also had lack of color as a result of the blood being thin and weak. My husband saw Dr. Chase's Nerve Food advertised, and got some for me, and wanted me to try it. I did so, and it has proven a wonderful help to me. By enriching the blood, it has restored color to my face and has built up the nervous system so that I rest and sleep well. It is a pleasure to recommend so excellent a medicine.

Dr. Chase's Nerve Food goes direct to the formation of pure, rich blood, and for this reason is the most certain means of increasing the quality as well as the quantity of blood in the human system. The feeble, wasted nerves are restored, and through the nervous system new vigor and energy is imparted to every organ and member of the body.

You will be surprised at the way this food cure puts new strength and vitality into the weakened body. And the best of it is that the benefits are both thorough and lasting. In this the Nerve Food differs from mere stimulating medicines which give rise to false hope and when discontinued leave you as weak as before. Put this great restorative treatment to the test and prove its merits in your own cases. 50 cents a box, 6 for $2.50. All dealers or Edmanson, Bates & Co., Limited, Toronto.

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All horses and mules more so than horses—hate to have their ears hampered. In fact, no horse ever decides upon a different course of action without first moving its ears from the normal position, and here is the key to the whole idea. As soon as it balks, get down from the seat and deliberately take one ear and push it under the crown piece of the bridle so that it is fast, and leave the horse to its own devices for a few minutes. He will commence shaking his head and doing everything he can think of to get that ear loose, until he has forgotten all about balking and his whole thoughts are centered upon freeing that ear. Now let the driver get back on the wagon, call on the horse to start, and off he goes. I have proved this trick to be successful with cow horses that thought it necessary to buck and pitch when first mounted in the morning, and with rearers in the saddle and horses hard to hitch. Leave the ear where it is for about twenty minutes, then stop and free it. Let the horse have time to shake his head and be satisfied that everything is all right again, and off he will go as pleasantly as possible.

As I said before, this trick will not break a horse from balking, but it will invariably start one that has balked on the road, provided he hasn't already been whipped an dabused to a point where nothing matters.—Our Dumb Animals.

SHOWING HORSES AT THE FAIRS

Breeders frequently try to argue themselves into the belief that they do not need to show their horses and colts at the fairs. They seek to escape the trouble of fitting and training, the expense and risk of transportation and showing, and the chance fo getting beaten in the ring. They hope that their reputation for having good horses will continue without having that fact constantly brought to public attention. Usually they change their minds after a year or two of absence from the fairs, and enter the lists again. People forget about the good horses absent breeders showed in the past; attention is given almost wholly to the horses at present displayed. The persistent exhibitor gains prestige and new friends every year, and his annual reappearance with his horses keeps his old friends steadfast. There is nothing like eternally impressing upon people's minds the fact that one's horses are among the very best in the whole country. It brings business and adds to the prices which buyers readily pay for the stock.

Some breeders command twice as high prices as others. It is largely because of showing at fairs. Their work at the fairs gives them a higher class of stock than they would produce without it. That is probably the principle reason for the higher prices. A man who does not exhibit is prone to overrate his own stock. He is satisfied with poorer individuals than those demanded by the man who is a constant exhibitor. The showman has his failings forcibly brought to mind, and he also faces the necessity of seeking improvement in every possible way in order to keep up the high standard of excellence required to win in the show ring. The breeder who begins to take things easy under the feeling that his business is fully established is almost certain to retrograde in character of stock produced and in volume of business coming his way. He is displaced in public attention by the new exhibitor. A glance over the fall fair entry lists for a term of years shows how they change from time to time. And the leading exhibitors are the leading sellers of breeding stock in nearly all cases.—Breeders' Gazette.

STALLS FOR HORSES

For horses weighing 1300 or under a good width is 4 feet. Horses over the above weight should have stalls 5 feet wide. The usual length of stalls is 9 feet. Double stalls should be 7½ feet to 9½ feet wide, according to the size of horses to be accommodated. For large draft horses stalls should not be less than 9 feet.

For horses mangers should not be made too large; to do so is merely to encourage waste of hay. Horse mangers should rise to three feet above the stall floor, with a depth of two and one-half feet, which will leave the bottom half a foot from the floor and permit cleaning out beneath. Length to be two and a half feet and depth two feet with slanting front. It is a good plan to make the bottom of slats an inch apart, which permits the fine hay that the horse will not eat to sift through and serve as bedding, and also prevents the manger becoming foul. The corners should be open to prevent accumulation of fine stuff where the horse cannot get at it, the front slat being nailed so as to rest one inch from the bottom of the side pieces.

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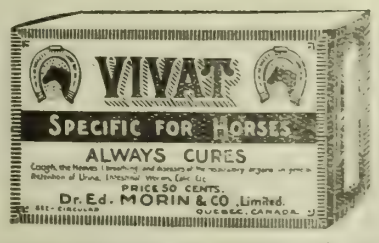

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POULTRY.

THE TRAP NEST A BOON TO POULTRYMEN

There is no disputing the fact; the introduction and use of trap nests marked a new era in poultry culture. Prior to the installing of traps the individual capacity of our hens was all guesswork.

Nearly every flock has its drones. They must be weeded out. The feed and the room are demanded by the actual workers. They can be detected only by means of trapping.

An instance just happened in our own yards that fully illustrates this: One particular hen in one of the flocks is about as fine a type for egg production as the most exacting judge could wish—and yet she has not laid three dozen eggs up to August 1st. On the other hand, the champion of the flock is just of that build which would be rejected by those who think they know how a heavy layer should be.

There are many reasons why the trap nests are boons to the fraternity, a few of which are:

First—They tell us which are our best layers.

Second—They tell us the number of eggs our best layers give us.

Third—They enable us to breed from the best.

Fourth—They point out which hens ay the brownest eggs.

Fifth—They tell us which hens lay the best shaped eggs.

Sixth—They arrest the egg eater.

Seventh—They give us a chance to discover the barren hen.

Eighth—They pick out the drones.

Ninth—They prevent crowding on the nest.

Tenth—They help us knock theories in the head.

When I read the argument that too much abor and time is involved in the care of traps I make up my mind that the writer has not the industry at heart. It was the trap nest that plainly and bluntly convinced me that I was a student in poultry culture, and yet I had previously spent twenty continuous years in the work. Like all poultrymen, I had my individual opinions about hens and eggs, and many of these were shattered when the trap nests came into use.

After carefully studying the subject and making many experiments, I have come to the conclusion that the only trap nest is the one that embodies ventilation, convenience, and accuracy.

To confine a hen in a poorly ventilated trap is not only torture but dangerous. Especially so during hot summer months.

Convenience implies the easy manner n which the hen can get into the nest, and the equally easy manner in which she can be removed. When a hen is not in a broody condition she will be ready to come off the nest after laying, the moment you show her a means of exit. When she is broody, however, you must lift her off, and some of the nests I have seen are hard problems to solve when it comes to removing the stubborn broody hen.

Accuracy is the mainstay. I do not want any confining pens to trap nests. It requires too much guesswork. You find a hen in the confining pen and one in the nest part, and you have but one egg; you do not know to which hen the egg beongs. If you must guess at it or if you must compare eggs in order to find the owner you are not doing accurate work. Some nests, too, will admit two hens at one time. Such nests are a mistake. One hen at a time, and she securely penned in until you release her, is the only way in which to accurately determine which are your best hens and which are your drones.

Between the hours of nine in the morning and three in the afternoon the nests should be looked at every hour.

Of course that means an outlay of time—but it is time well spent. Yet is it as costly to spend five or ten minutes every hour to look after a lot of traps as it is to feed and care for a lot of hens that are not paying their board? And when you count on the advantage in building up a strain of heavy layers, is there not enough profit in that to pay for the time it takes to look after the nests?

We all know that the successful poultryman is continually at his post, that he gives the work his undivided attention. Then how much extra labor does it cost him to hastily glance at his nests every hour?

There is a benefit, too, outside of the egg question. Every hen must be handled to be gotten off the nest. This gives one an opportunity to notice anything wrong—slight colds, scaly legs, wounds, etc., that might be overlooked otherwise.

In conclusion, let me suggest that in putting in traps it is best to allow one trap for every three hens in the pen. This will avoid much laying outside the nest.

100-Acre Farm $900

5 Acres Corn, Potatoes

Oats, apples and garden vegetables included by owner who must make immediate move Only 2½ miles to market R. R. town. Cuts 20 tons hay, well fenced pasture, estimated 700 cords hard wood, 300 cords pulp, 30,000 ft. timber which marketed 2½ miles away will more than pay for the whole farm. Abundance fruit; comfortable 7-room house, 50-ft. barn. $900, part down, takes all. Details page 9, "Strout's Big Bunch of Bargains," copy free E. A. STROUT FARM AGENCY. Dept. 2612, 294 Washington Stree , Boston. Tel. Main 3348.

KEEP ONLY PRODUCERS

With the price of feed advancing it becomes more necessary than ever to keep only productive birds in the flock. A few good pullets or yearling hens properly housed and carefully fed oftentimes give greater net returns than a flock twice the size that does not receive sufficient attention. If the poultryman has accommodation for 200 laying hens he should endeavor to fill the pen with birds that qualify to a certain standard. This will necessitate hatching many more chicks than will be required. There is bound to be a certain percentage of pullets that give no indication of being profit producers. They should be placed in the fattening crate. They may make good roasters if they don't qualify as layers. Plenty of constitution is required and they should show some life. To the average person choosing a good bird is a more difficult task than the selection of other farm animals. The poultryman who picks pullets with a good head, alert eyes, with face and wattles of fine texture, has taken the first step toward establishing the type that generally are the best layers. Birds with dull appearance, long narrow head, or crooked breast bone should be put in the fattening crate rather than in the laying pen. As the winter advances further culling may be necessary in order to keep the flock up to the standard.

The flock of yearling hens should also be culled in the fall when not entirely disposed of. The birds which are last to moult are considered by many to be the heaviest yearly producers. With the yellow-leg breeds it is not always those with the brightest legs that should be selected as layers. It is claimed that the coloring pigment in the legs is reduced by heavy laying. In the white-faced birds the wattles lose their pure white color. Too often it is the birds with the brightest colored legs or the whitest wattles that are selected, when in reality they may be the very ones that have been taking care of themselves. It appears reasonable that the heaviest laying birds cannot look as fresh as the medium producer. The busiest birds are frequently the layers. A rule followed by some poultrymen is to select the birds that are last to go to roost at night and first to leave it in the morning.

Show qualities and heavy laying are difficult to combine in the one bird. The poultryman who makes a practice of following the shows selects and breeds a somewhat different style of bird from the one bred for utility purposes. It is as necessary to have a definite breeding and mating policy with poultry as it is with the larger classes of live stock. The non-producers in the flock keep down the average egg yield. The fewer of the unprofitable birds kept the greater the net returns from poultry raising. Trap nests are the most reliable method of distinguishing between the profitable and the unprofitable hen. On the farm this system cannot conveniently be followed; other methods must be resorted to. The flock can be greatly improved through the male bird. The utility flock should be headed by a male bird of laying stock. The Experiment Stations are commencing to keep records of the fowl and issue pedigrees for the birds. Results have proven that breeding counts for a great deal in improving the laying qualities. However, the more intensely the birds are bred for egg production the less likely are they to show fine feathers. It is for eggs and not feathers that most farm flocks are kept.

MILK FOR POULTRY

If there has been one thing definitely proved in poultry investigations it is that animal protein in some form is essential to the best egg yield and rapid growth in young stock. This element of the food can be supplied by feeding either skim milk or buttermilk. On most farms where cows are kept the buttermilk or skim milk goes in the hog trough.

While milk certainly an excellent food for hogs, my experience is that it will yield a larger profit when fed to the hens and growing chicks. The hens will not only keep healthy and thrifty, but will do their very best to keep the egg basket full.

Milk may be termed a forcing food, and is especially valuable for growing pullets. If the most is to be made out of poultry the pullets should be fully matured and laying by October, when the price of eggs is up. If the pullet is not fully matured before the cold weather sets in the probabilities are that she will not lay until spring. When the chicks are hatched in March and April, and milk is kept before them, no difficulty will be experienced in getting them to laying maturity before cold weather. Experiments have shown that the Aprilhatched pullet, fed a milk diet, will lay as soon as the one hatched in February and fed on grain alone.

In feeding milk some care should be exercised. If sour milk is fed it should be fed all the time. It will not do to feed sweet milk today and buttermilk tomorrow, as the change from one to the other will upset the fowl's digestion and bowel trouble will result. The milk can be fed alone or used to moisten the mash. Perhaps the latter method is to be preferred, since it can be fed without danger of waste, and all the fowls have an equal chance for a share.

FEED WELL AND WISELY

The need of feeding hens a well-balanced ration is shown by Missouri experiments. Four pens containing five hens each were treated just alike, except for the feed.

The test with a wide ration containing elements which would produce 3 yolks for each white laid 379 eggs in the first six month.

The test with a narrow ration containing elements which would produce 2 whites to each yolk, produced 269 eggs.

The test with a ration containing equal yolk and white material, but without minerals to produce the shell, produced 161 eggs.

The test where the ration contained elements necessary to produce equally all parts of the egg produced 1,603 eggs in the same time. This ration is called a balanced ration for egg production.

The following ration is fairly well balanced for egg production: One hundred and fifty pounds each of cracked corn and cracked wheat, 20 pounds each of wheat bran, middlings, corn meal, ground oats, and gluten meal, 30 pounds beef scraps, five pounds each of alfalfa meal and old process linseed oil meal.

For hens having free range of the farm a very simple ration is made of equal parts cracked corn and cracked wheat, and a dish of beef scraps to which they can help themselves.

TREATING LAME CHICKENS

I have frequently read about a disease in chickens which causes their feet to crumple backward, thus preventing them from walking. The usual remedy suggested is to kill them. I had a chicken so affected. The toes drew together and it appeared to have no use of its legs whatever. The only way it could move was to flutter about with outspread winds, its body resting upon the ground.

The little fellow was only a few weeks old, and I concluded to try and save him. I warmed him beside the stove until he panted from heat. Then I spread his toes in a natural position and applied a generous quantity of camphorated oil, rubbing it in well.

After that I used alcohol several times, bathing feet and legs, keeping the toes spread, and forcing him to stand upright. Then I wrapped him in a woolen cloth and put him in a warm place until he began to chirp loudly. When I uncovered him he could stand upon one foot firmly, then I put him in the pen with his mother, and in about half an hour he was running about as actively as the balance of the brood and eating heartily, although before being treated he refused to swallow a morsel.—R. Radcliffe.

FATTENING THE SPRING HATCH

The time to sell the early spring-hatched chickens is at hand. These young chickens properly marketed are money makers. They should weigh from one and a half up to three pounds, this depending on the kind of chickens raised. Birds of the Leghorn variety will weigh about one and a half pounds in July, while some of the heavier breeds will weigh three pounds and sometimes more. There is a steady demand for spring chickens at this time of the year, and we always market the surplus and in that way realize a fair margin of profit from them. The spring chickens bring from 20 to 25 cents a pound readily, and sometimes more. If sold by the pound we always fatten them before selling. The first thing I do before fattening a bunch of spring chickens is to prepare a place for them where sanitary conditions are ideal and where their quarters are dry and free from all vermin. The fattening pen we use—a home-made affair—is not over five feet ong and about three feet wide. In a pen of this size the hickens are confined and will take on fat quickly if properly fed. Fresh, clean water is kept before them at all times. There are many different kinds of feeds to fatten chickens, all of which have their merits; however, every one has his own ration for fattening, which he thinks a little bit better than any other combination of feeds.

The following ration fed liberally has given us splendid results and will fatten a bunch of chickens in a comparatively short length of time. Ra-

tion is as follows: Corn meal mash in the morning. The midday meal consists of cracked wheat and corn. At night we feed a mash consisting of boiled oats and bran. The chickens are fed liberally at each feeding. By following out this system of feeding we are able to fatten a bunch of young chickens so they are nice and plump and ready for the market in about two weeks' time. Older fowls may be fattene din the same way, except that we feed the whole corn instead of cracking it up. The corn meal mash is mixed up with milk and is very fattening. Every three or four days we give them a quantity of warm milk to drink for a change, and it is wonderful to see how nice and fat a bunch of chickens can be made in such a short length of time. Regularity of feeding must not be overlooked, as this is very important. We never allow surplus feeds to lie in the trough, but renew it each day.

Fattening poultry is just as important as fattening or caring for any other branch of live stock about the farm. Good judgment, regularity of feeding, and the proper kind of feed is all that is required to be successful.

A fattened fowl will not only weigh more, but will look better, and for eating purposes they are better than one not fattened before putting it on the market. The cost of fattening a bunch of chickens is only a trifle as compared with the additional profits received when they are marketed.—Mr. H. W. Swope.

HAVE FOWLS IN GOOD CONDITION WHEN MOULTING

When growing fowls pass through a succession of feather alterations a thorough moult of all the feathers is a process belonging to adult fowls.

A pullet that begins laying at six, seven, or eight months will not shed her feathers until she has completed her laying period if she is regularly fed an egg-laying ration and kept under clean, healthful conditions. This will make her about sixteen or eighteen months old when she moults. Young fowls that are mature and are not favored as to egg laying by food, weather, or other conditions will begin to moult before abundant egg laying, thus deferring that function.

This early moulting is not so conspicuous as the moulting of the older birds, but serves to hinder egg production for a time. Birds hatched very early in the year and maturing in summer will often do this, laying for a brief time and then suspending this function during early winter when the eggs are wanted.

Fowls hatched in April and maturing in early November will usually prolong their egg production into the natural breeding season of late winter and spring, moulting in the summer.

The period of the moult is a strenuous one for the birds. Bodily covering seems to have a psychical as well as physical relation to the condition of fowls. Observation of the flock during the moult, especially if it is a lagging process with many "undressed" birds and delay in the arrival of new clothes, will disclose an air of shiftlessness; no self conscious strutting and no happy chatting. Not only are such birds not up to physical standards, but they are below par mentally as their lack of interest indicates. The listlessness and extreme dishevelment are not necessarily a part of the revesting process, but of unfavorable conditions which retard the growth of new feathers that should quickly replace the old.

Diet has much to do with it, and so have climatic conditions and sanitation. Any mode of life that contributes to a vigorous physical condition hastens the development of the new garb of feathers.

The moulting period with most birds follows the breeding season, and with fowls at an adult age it generally follows the most active period of egg production. Unless the bird is possessed of superabundant vigor the function of egg laying is entirely suspended, the elements needed for feather formation making too great a tax upon the bird's system to admit of egg production.

Fowls should begin to moult in a plump condition, so that the falling feathers will not leave them exposed to weather inclemencies, so that the formation of feathers shall proceed unchecked and egg laying may begin as soon as possible after the moult is accomplished. They should have clean runs and be free from vermin. Grass-sown runs with some clean space for dust baths and shade from the hot sun—not a dense shade, but such as one tree or two will give—help the birds through this period.

The diet should be a complete ration, one that supplies some fat, some protein, and some mineral matter; and its sources should be various, for the birds seem to tire of one or two forms of food during the moult.

As soon as the plumage begins to look dull and ragged, partly from lack of preening and partly because the infant feather is begging the nourishment which supplied the old feather, take away highly seasoned or over-stimulating food if you have been feeding it, and give them just nourishing food, depending upon green food as a relish. Feed penned fowls three times a day, giving one meal a whole grain that combines necessary food elements such as wheat or oats. Whole corn should form another meal, and a dry or wet mash of bran, with some linseed meal, should be fed at least three times a week, using about one-sixth of the bulk of the mash linseed meal and the remainder bran or bran middlings. If the hopper method of feeding is used the wheat or a wheat, oats, and barley mixture may be kept in the hoppers so that the fowls can get it at any time, but do not feed the corn in this way, as fowls are very fond of it and will eat too much.

Pulverized oyster shell and plenty of grit, preferably crushed hard stone, should be always at hand.—M. R. C.

SUPERIORITY OF LIME WATER FOR PRESERVING EGGS

Experiments in egg preservation were begun at the Experimental Farm, Ottawa, in 1898, and have been continued every season since that date. In the course of these experiments trials have been made with more than twenty-five different fluids and preparations that have been proposed or sold as egg preservatives. The work of these fifteen years has shown the superiority of lime water over all other preservatives which we have tested. Closely following lime water is the so-called "water glass" or sodium silicate. Both, according to our results, have proven effective preservatives, but it may be remarked that it is useless to expect that either can entirely arrest that "tale" flavor commonly found in all but strictly fresh laid eggs.

Preparation of Lime Water

The solubility of lime at ordinary temperatures is 1 part in 700 parts of water. Such a solution would be termed saturated lime water. Translated into pounds and gallons, this means 1 pound of lime is sufficient to saturate 70 gallons of water. However, owing to impurities in commercial lime, it is well to use more than is called for in this statement. It may not, however, be necessary if good, fresh burnt quicklime can be obtained, to employ as much as was at first recommended, namely, 2 to 3 pounds to 5 gallons of water. With such lime as is here referred to one could rest assured that 1 pound to five gallons (50 pounds) would be ample, and that the resulting lime water would be thoroughly saturated. The method of preparation is simply to slake the lime with a small quantity of water and then stir the milk of the lime so formed into 5 gallons of water. After the mixture has been kept well stirred for a few hours it is allowed to settle. The supernatant liquid, which is now saturated lime water, is drawn off and poured over the eggs previously placed in a crock or water-tight barrel.

As exposure to the air tends to precipitate the lime (as carbonate), and thus weaken the solution, the vessel containing the eggs should be kept covered. The air may be excluded by a covering of sweet oil, or by slacking upon which a paste of lime is spread. If after a time there is any noticeable precipitation of the lime the lime water should be drawn or siphoned off and replaced with a further quantity newly prepared.

General Precautions Necessary to Take

It is essential that attention be paid to the following points:

1. That perfectly fresh eggs only be used.

2. That the eggs should throughout the whole period of preservation be completely immersed.

Although not necessary to the preservation of the eggs in a sound condition, a temperature of 40 degrees F. to 45 degrees F. will no doubt materially assist toward retaining good flavor, or rather in arresting that "stale" flavor so often characteristic of packed eggs.

Respecting the addition of salt, it must be stated that our experiments—conducted throughout fifteen seasons—do not show any benefit to be derived [illegible] ably by inducing an interchange of [illegible] lime water.

Water Glass

Water glass [illegible] using solutions varying from 2 per cent to 10 per cent. On the whole, solutions 2 per cent to 3 per cent [illegible] to 5 lbs. of sodium silicate in 10 gallons of water) have given better results than stronger soltuions. Although in the main the results have been very fairly satisfactory, we are of the opinion that lime water is superior as a preservative. Further, lime water is cheaper and pleasanter to use than water glass solution.—F. T. Shutt.

I have solved the marketing question by bringing the market to my door. When my chickens rached the proper size I advertised in the daily paper, which brought customers right to my door. Now I buy up young chicks of my neighbors, put them in a large shady pen, feed plenty of grain and green stuff, and keep fresh water before them at all times, thereby insuring good health. In this way I am able to market those that are fat and free from vermin.—Mrs. J. Martin.

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FOR HOME AND COUNTRY

This Department is devoted to the best interests of the Homes of the Maritime Provinces. Contributors to these columns are leaders in the "For Home and Country" movement. This Department is yours. Use it to the best advantage by sending us timely suggestions, short articles dealing with your experiences, and reports of your Institute meetings.

A NOVEL VENGEANCE

"I'll be even with her; yes, she shall live to rue the day she ever laughed at Dick Burton, if I have to sell my soul to the devil to make 'er!"

These words were hissed rather than spoken by an excited little man who was walking rapidly along the road which led from the pretty village of Bronn to his farm some mile and a half away.

Dick Burton was not a pleasant looking man at any time, and in his present rage he was absolutely repulsive.

He had been a hard working man all his life; his father before him was a laborer who, when he died left his son nothing but the advice, which he breathed with his last breath: "Dick, get money; get it, Dick—somehow—anyhow."

And Dick had got it, and if the village gossips spoke the truth, he had not been particular how he got it.

At the age of forty he owned his own farm, which was one of the biggest and most prosperous around Bronn, and in his own opinion he was a match for any girl for miles around. That afternoon, it being Sunday, he had arrayed himself in his best, and, confident of success, had called at the little cottage where Mrs. Myrtle, a poor widowed gentlewoman, lived, and had sought the hand in marriage of her only daughter, Madge, the belle of Bronn. And she—had laughed at him! Laughed at the owner of Scraggs Brow!

Dick Burton had not courted the girl, or he might have been prepared for her refusal. It had never occurred to him to spend his valuable time hanging round any woman; he simply chose the one he considered best (and he evidently had excellent taste in feminine beauty), and then when the time came that he was prepared to take unto himself a wife he had proposed to her that he considered he suited to fill that honorable position, and had been laughed at for his pains.

But that was not all: On his way to visit Madge he had met Peter Snagg the greatest gossip in Bronn, and, feeling in high good humor with himself, the world, and Bronn in particular, he had confided to Peter, who had ventured a remark on his gay apparel, the nature of his errand. Peter had fairly stood aghast at Dick's confidences, and had exclaimed: "Why, lad, if yon bonny lass weds thee, thou'll ha' to give up farming and tak' to the show business; thee'd make a fortune as 'Beauty and the Beast.'"

Dick had been very annoyed at Peter's remark, and had made up his mind that he should not be invited to the house warming when he and Madge were married.

As he hurried home he could imagine the hilarity there would be at the "Fox and Hounds" the next day when Peter told his story to the convivial party which met in the cozy parlor each evening to drink, smoke, and gossip.

Yes, the thing was complete; he would be the laughing-stock of the countryside. As the thoughts chased each other through his disordered mind, dulled to every impulse but that of avarice, he cursed anew the girl who he considered had insulted him.

The innocent cause of all this furore was busily engaged getting ready to attend the evening service at the village church.

Her little bedroom opened out of the living room where her mother was putting away the tea things. When Madge was ready, after giving a last pleased smile at her own reflection in the looking glass, she walked over to her mother and asked if she looked "all right." Mrs. Myrtle turned from the cupboard where she was placing the crockery and surveyed Madge lovingly.

"Yes, dear," she said, "you look very nice, a white dress always becomes you; but I hope it will be warm enough; it is sure to be cool coming out of church."

Closing the cupboard doors, she took her daughter's hands in hers, and added sadly: "Madge, dearie, you grow more like your father every day you live. I pray God your life may be a happier one than his was."

The mother and daughter were very quiet for some moment, both thinking of the handsome ames Myrtle, who died at the early age of forty, a disappointed and heart-broken man, leaving his wife and daughter but a tiny annuity to live upon.

Madge kissed her mother gently, and then, hoping to turn the drift of the conversation, said gayly: "May I tell Mrs. Wilde that I might be the mistress of Scraggs Brow if I chose?"

Mrs. Myrtle caught the laughing girl by the arm, and, with a nervous look around, as though afraid some one might be listening, she begged her not to mention Dick Burton's proposal.

"I am afraid of the man, dear; his face was terrible to look at when you laughed at him. I shall never know a moment's peace when you're out of the house. A man like that will never forgive you."

"Oh, mother, dear," exclaimed Madge, "how foolish of you to think any more of the matter. Indeed, I am not afraid of Dick Burton. He knows better than to try any of his bad-tempered tricks on me in Bronn. Why, I believe the lads around would lynch him if he did." And, laughing merrily, the girl kissed her mother and started off for church.

Mrs. Myrtle stood at the door watching her pretty daughter until she turned off the road into the fields beyond which lay the beautiful old church; then with a sigh she closed the door and sat down by the window to read and think alternately.

Madge reached the church just as the bells were giving their last call to service. As she stepped into the porch the village youths who were standing there waiting until the bells stopped before entering the door, made way for her rather shyly, looking the admiration they lacked courage to express. In answer to her pleasant "Good evening," they blushed and stammered in a way which caused a man coming uj the path to ask them what there was about Miss Myrtle that turned them all into a pack of "half-baked fools."

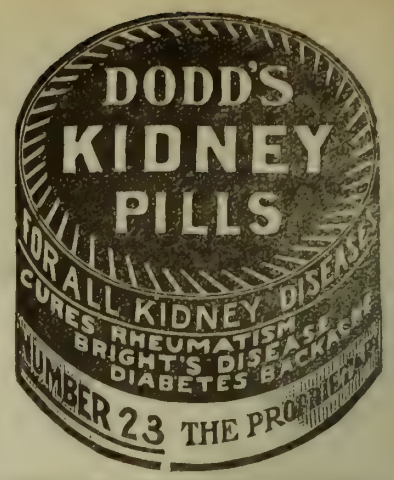
As the door had closed upon the young lady in question, their normal manners, or the lack of them, once more asserted themselves, and the unlucky questioner was not sorry when, the bells having ceased, the youths stamped into the sacred building and permitted him to follow.

The evil fire in Dick Burton's breast was fanned to fever heat by the jokes of the other farmers around. to whom Peter Snagg lost no time in telling his news of Dick's proposal to take unto himself the prettiest girl in the whole countryside. At last Dick decided to take a holiday until the matter had had time to wear itself out, and so went to Carlton, the nearest town of any importance to Bronn. Never having had a holiday before, Dick found it difficult to put in time.

One evening after thinking of his

A WOMAN'S MESSAGE TO WOMEN.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations bladder weakness. constipation, catarrhal conditions, pain in the sides regularly or irregularly, bloating or unnatural enlargements, sense of falling or misplacement of internal organs, nervousness, desire to cry. palpation, hot flashes, dark rings under the eyes, or a loss of interest in life, I invite you to write and ask for my simple method of home treatment, with ten days' trial entirely free and postpaid, also references to Canadian ladies who gladly tell how they have regained health, strength, and happiness by this method. Write today. Address: Mrs. M. Summers Box 309, Windsor, Ont.



A Woman's — Problem

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No other medicine has been so successful in relieving woman's suffering as has Lydia E. Pinkham's Vegetable Compound. Women may receive free and helpful advice by writing the Lydia E. Pinkham Medicine Co., Lynn, Mass. Such letters are received and answered by women only and held in strict confidence.

upposed injuries until his impotence to even matters up with his tormentors nearly drove him distracted, he walked into the first place of entertainment he came across, and sat down, longing for anything which would make him forget for a time his own miserable self. It happened to be a large lecture hall into which Burton had strayed, where a professor of hypnotism was lecturing to an attentive if select audience. The country farmer, who had never even heard of hypnotism, could make nothing of the professor's discourse. Later on in the evening the lecturer asked men from the audience to come to the platform. About thirty young men volunteered, and in a few minutes the professor had placed half of them in a hypnotic sleep. The rest of them he sent down, telling them they needed mental development before they would make good hypnotic subjects. Burton became convinced that the professor was a sorcerer, and quietly changed his place to a seat nearer the door. The evening wore on, and Dick's eyes opened wider than they had ever done in his life before.

As he watched the men on the platform do anything and everything the lecturer suggested that they should do, and then at a snap of his fingers regain their ordinary senses and become utterly forgetful of everything that they had been doing while in their hypnotic state, the idea formed itself in his heated brain that he would offer this "corcerer" money—a lot of it—to come to Bronn and make Madge Myrtle fall in love with him, and then he in his turn would laugh in her face in view of the whole village.

The man grit his teeth and clenched his fists at the thought. As a close to the lecture the professor ranged his subjects before him in a row, and, after making passes in front of each individual face, he selected one huge, ungainly fellow, and informed him that he was the most beautiful woman in the town, and that all the men were in love with him. He then suggested to the remainder of his subjects that they each were very much in love with the handsome girl before him (the before-mentioned ungainly fellow) and that they were all dying to propose to her. The professor then walked to the side of the platform, and the fun commenced. The big man who imagined himself the beauty of the town simpered and twirled himself around in a manner which suggested a playful elephant. Th eother men were angrily pushing each other away in their frontic efforts to monopolize the "handsome girl." Miss Beauty, however, would have none of them, and, with a soul-piercing giggle, she tripped heavily across the stage daintily holding up her trousers as she went. The audience rose as one man and shrieked with laughter. When the absurdity of the "test" was at its height the professor snapped his fingers, and each man regained his normal condition in his position of adoration before the biggest and ugliest man of the party, who stood blinking his eyes and still unconsciously gripping his trousers leg. The look of shamed consternation which passed over the different faces as each man scrambled to his feet and fled off the stage brought the curtain down with shouts of laughter and applause, an drepeated calls for the professor, who bowed his acknowledgments from the front of the platform.

That night Dick Burton slept but little, and next morning found him interviewing Professor Blamire. The two men talked long together, and when Dick wended his way back to his lodgings his small eyes were gleaming like a serpent's, and his face was lined in unaccustomed wrinkles by a bland smile which spread over his evil visage.

That day he returned to Bronn, where he laughed so heartily with the first man who joked him about "his wedding bells" that the other humorists decided there was "no change" to be got out of Dick since his holiday, and in future left him severely alone.

A few days later a white-haired old gentleman calling himself Dr. Down arrived in the village and took rooms at the Fox and Hounds, where he told the landlord he intended making a long stay, as the beauty of the neighborhood delighted him. The stranger was a man of much culture, and very soon the vicar of the parish and he were on excellent terms together. In a short time he had become a frequent visitor at the vicarage, and there he met Mrs. Myrtle and her daughter.

Madge and he became very good friends. Her mother was pleased that she should have the advantage of the friendship of an old gentleman of such evident accomplishments. Ferns were a particular hobby of Dr. Down's, and as Madge knew the most likely places in the neighborhood where the rarest specimens abounded, she and the doctor were often to be seen with basket an dtrowel in hand wandering about the lanes and hedgrerows together. One day it was arranged that the two should walk to a small wood a few miles from the village, where the parsley ferns grew in great abundance. Mrs. Myrtle packed them up a basket of provisions, as the weather was too warm for them to hurry back in time for the midday meal. They walked along at a good brisk pace, reaching the wood long before noon.

"Surely, Miss Madge," Dr. Down exclaimed, "we may be permitted to call a halt in this beautiful spot; it's perfectly barbarous to go tearing through such scenery. I begin to think that you are jealous of so much beauty that is not your own," and the doctor laughed in his strange, youthful manner which so ill accorded with his grey locks, and lazily threw himself on the moss at the side o fthe running stream and waited for his pretty companion to follow his example.

"You've been doing the tearing, not I," retorted Madge. "Why, I declare you've tired me out thoroughly. For your punishment you may have the pleasure of 'grubbing' for ferns alone, for I vow I shall not go a yard farther." And with a sigh of genuine weariness the girl settled herself comfortably on a bank of bracken with a huge boulder at her back. Throwing off her hat, she sat with her hands resting in her lap, her beautiful eyes closed, her whole attitude one of utter restfulness. The doctor watched her every movement with the keenest interest, and, rising, walked softly toward her.

"I see I have overtired you," he said soothingly. "No, don't move; just let yourself go, and rest thoroughly. A few moments will be enough if you go

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"Mother Says We Couldn't Run The Farm Without

CROWN BRAND CORN PURE SYRUP

IT'S downright scandalous, the number of 20 pound tins I buy. But, as Mother says, we use it for 'most everything.

"Nothing else tastes quite so good on all kinds of Hot Bread, Johnny Cake and Griddle Cakes.

"Mother uses it for all her cooking—for Cookies, Cakes, Gingerbread and Pies.

"And I am almost ashamed to mention the quantity of 'Crown Brand' and bread that my youngsters consume. This syrup certainly is a favorite in my home".

The 20 pound tin is convenient and economical for home use, although you can get "Crown Brand" in 2, 5 and 10 pound tins and 3 pound glass jars. Ask your dealer.

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the right way about it; now I am going to treat you as I do my nervous, overworked patients; all you have to do is to look steadily at me and think of nothing but sleep—profound sleep—sleep, just sleep, sleep, sleep!"

As he spoke he gently stroked the beautiful young face downward, keeping his long fingers wide apart so that her eyes might still meet his, which gazed into hers as though they would search into her very brain.

The girl was too utterly tired to make the least struggle against the influence she felt creeping over her. The gentle pressure of the doctor's fingers soothed and cooled her heated face, his gaze quieted her, and his gentle reiteration of the words "Sleep, perfect sleep," in full melodius tones ulled her, until her eyes drooped and at last she fell sound asleep.

Dr. Down did not relinquish his fixed gaze until he had assured himself that his subject was completely under his control; then, rising from his kneeling position, he wiped the perspiration from his face, murmuring as he spread his drenched handkerchief on the grass to dry: "Ah, that was warm work, but in time she will prove a splendid subject."

Not the faintest trace of shame entered this man's mind at having thus taken advantage of a young girl and her trustful mother to gain his own ends. He was a gentleman and an educated one, but before all he was a student of hypnotism, bound up in his beloved science body and soul, and with never a thought beyond it.

When Dick came to him the morning after his lecture at Carlton, Dr. Down, or Professor Blamire, as he then called himself, laughed his proposal of money aside, and said that he would be glad to tr ythe experiment if the subject proved a good one, as that morning he had received notice from the Carlton authorities telling him that he must give no more demonstrated lectures in the town. The professor was furious; he had just crossed from America, where his home was, hoping to get a different class of subjects in England, and no wto find himsel ftreated as a common showman and thus ordered off the green, as it were! Yes, he was ready for anything, as long as the subject was worth spending his time over.

Dick did not think it necessary to tell the professor that he intended openly to insult the girl when he was sure of her affections; he merely said that he was madly in love with her and that he would give worlds if he could gain her love in return. The professor had promptly assumed the disguise of an old man; then he had called on the vicar of Carlton, from whom, by means of some very tall lying, he had secured a letter of introduction to the vicar of Bronn, after which he had come to that village ready for his experiment. He had not hurried matters; his "subject" was a delicate one, and he knew it. He had spent his time feeling his ground and establishing perfect confidence in himself in the girl's mind, and now the reward was his, for once hypnotized he knew that he could always repeat the process without further difficulty.

When Dr. Down was pleasantly cool he returned to the sleeping girl, and once more fixed his keen gaze upon her face, making several passes before her closed eyes; then in a mnontonous, soothing, insistent voice he informed her that she had enjoyed a very refreshing sleep and was thoroughly rested. He waited a few seconds and then continued: "When next I propose sleep to you you will at once answer my suggestion by falling into as profound a sleep as you are now enjoying. Listen attentively: Tomorrow you will meet Dick Burton, he will wish you good day, and you will at once shake hands and be very friendly with him; you will walk down the village together, and when he leaves you at your own gate you will be very sorry that you ever refused to marry him, for you will realize that he is a good, honest man, and that he loves you very truly, and you will then love him. You hear me; before you part you will have found out that you love Dick Burton—you—love—Dick—Burton! Now take this basket and fill it with ferns, and when you wake you must know that I, Dr. Down, have gathered them while you have been resting. Now go, gather ferns."

Madge rose and obediently filled her basket, afterward washing her hands in the stream. As she did so the doctor frowned at his carelessness in having forgotten to tell her to do so; he knew that had she awakened with soiled hands the first germ of distrust would have been sown; however, the girl's natural cleanliness had saved the situation. "Thus does reason ever aid science," the doctor soliloquized, as he led the girl back to her former position on the bracken, and then he said very gently: "Remember—now waken." Madge woke with a start, to find her old friend standing laughing down at her with a basket of ferns in his hand.

"Oh, I have been asleep!" she said guiltily, looking at the ferns.

"Yes, you lazy young lady. I wonder what your mother will say when I tell her that you have slept while your poor old friend has done all the work."

"I'm wondering what she'll say," saucily answered the girl, "when I tell her that the said 'poor old friend' walked me along so fast that I was tired out, and compelled me to lie down and sleep in the open like a sheep dog."

They both laughed, and then Madge, declaring that she was famished, fell upon their basket of provisions, and had a most delightful luncheon, which they washed down with clear spring water.

On the following day all Bronn was set in a state of the wildest excitement by seeing Madge and Dick Burton walking through the village talking affably together. Day after day the same undreamed-of event occurred. A matron of Bronn was heard to remark that "a body can't go outside the doors without meeting that queer mixture of a couple acourting like a pair o' ill-matched turtle doves."

When at last the news was announced that the pair were to be married the following month the wiseacres of Bronn slapped their pockets and winked knowingly, and all agreed that the longest pocket was sure to win, and, content with this explanation, ceased to wonder, and settled down to watch the proceedings with interest. Dick had long since given up his idea of spurning Madge, and thus avenging her former slight. After all, he was a man, and his lips were hot with her kisses, her arms had hung around his neck, and he had learned to love her with all the force of his savage, untrained nature. When she was with him he was as one drunk with the fervor of his own emotions, and when they were apart he tormented himself into a frenzy, fearing "the spell' would cease to act, and her love, which had become as the breath of life to him, should have turned again to scorn. At such moments he even prayed to God, or to God as he knew Him, and promised that he would devote part of his wealth to build a new altar in the church if only Madge still continued to love him; but should she fail him he vowed that he would live the remainder of his life to curse and defame God's name.

Mrs. Myrtle was all but heart-broken at her daughter's strange infatuation; she implored Madge with tears in her eyes to come away from Bronn and forget this fearful man; but Madge only replied with tears and protestations that she loved Dick better than her life, and must marry him or die.

The professor was in a state of delight at the success of his experiment; he did not allow one regret to enter his mind; he thought no more of the consequences to his "subject" than the vivisectionist considers the cries of his victim.

He and Madge had many more excursions for ferns and mosses, and each time Madge returned more completely infatuated with her repulsive lover than ever. At last the wedding day arrived, and Bronn turned out as one man to see the ceremony, much as the crowd gathers to witness the lion tamer put his head into the lion's mouth.

Dick was in the church, nervously awaiting his bride.

Dr. Down, who, at the earnest solicitation of Madge, had consented to act as Dick's best man, stood beside him, almost as nervous as was the bridegroom. At last a loud cheer from the boys outside the church heralded the arrival of Madge. Every one of that packed audience turned to watch the bride enter the door. Ah, how beautiful she looked in her bridal dress! The men gazed at her almost with awe, women felt a sob rise in their throats as their eyes travelled from the lovely girl to the misshapen form awaiting her at the altar. The poor heart-broken mother gave one long-drawn sigh and, sinking on her knees, prayed in her agony to God to spare her child ere it was too late.

Madge walked up the aisle quite steadily, but, it was noticed, somewhat listlessly. She heard a sigh which was almost a cry, and stopped hesitatingly and gazed around her as one awakened out of a sleep; she touched her dress wonderingly, and then said, in a voice which sounded very far away:

"Mother, where are you, dear? I heard you cry."

The congregation made no sound; it was spellbound. The mother rose and held out her arms to the child. At that moment Dr. Down walked gently up to Madge, and, taking her arm, led her to the altar, where Dick stood, his face drawn and haggard, his hands clutching the communion rail. Madge looked at Dick, and then again at her white dress. She turned a terrified face to the vicar, who stood, book in hand, watching the strange scene.

"Why am I here?" she asked, her clear young voice ringing through the church.

"You are here to be married to Dick Burton, my dear," the vicar said.

The girl turned and faced the terror-

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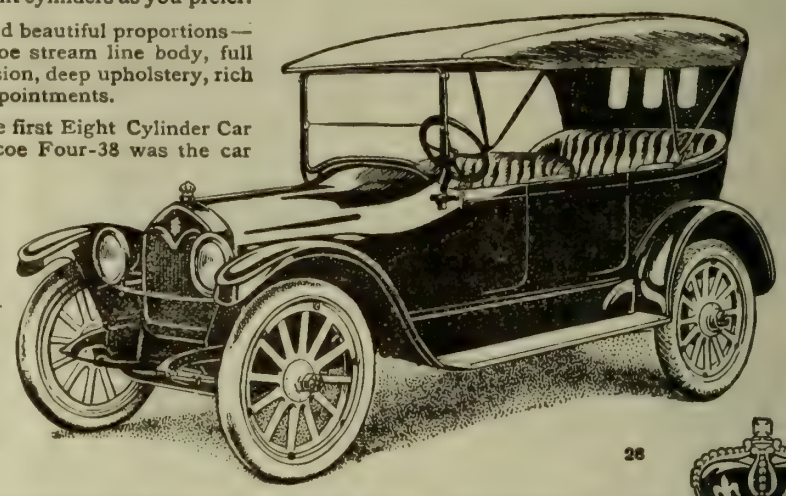

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stricken bridegroom. The poor wretch leaned towards her. "Madge, dearie," he whispered hoarsely, a world of tenderness in his coarse voice, his hands reaching out as though to touch her.

With a scream, she pushed him from her.

"Mother, mother!" she cried. "Save me—save me!"

Despair lent vigor to gentle Mrs. Myrtle. With a bound she reached the girl's side, and, taking her in her arms, half led, half carried, her out of the church, and, placing her in the waiting carriage, bade the astonished coachman drive quickly home.

The vicar calmly closed his book, and dismissed the congregation.

Dr. Down dragged the wretched Burton, who seemed incapable of assisting himself, out of the church by a side door. As he parted from him at Scraggs Brow he blandly remarked: "A most interesting experiment, showing clearly how little removed the ordinary mortal is, even in these days, from primeval man. The whole course of science broken down by the mere cry of a mother to her child. Interesting—very!"

MILK BOTTLED

There's many a slip 'twixt cup and lip, and there is many a microbe between the reasonably clean milk inside a bottle and the pitcher or glass into which it is poured.

Milk bottles from the very best dairies are left at our doors covered with dirt. If you do not believe this to be true, rub your fingers over a bottle and then examine them. Dust will cling to glass even after it has been thoroughly cleaned, and milk bottles, being usually a trifle greasy, are prone to hold every particle of dust which, except on rainy days, floats in clouds over and under and through the milk wagon during its long journey.

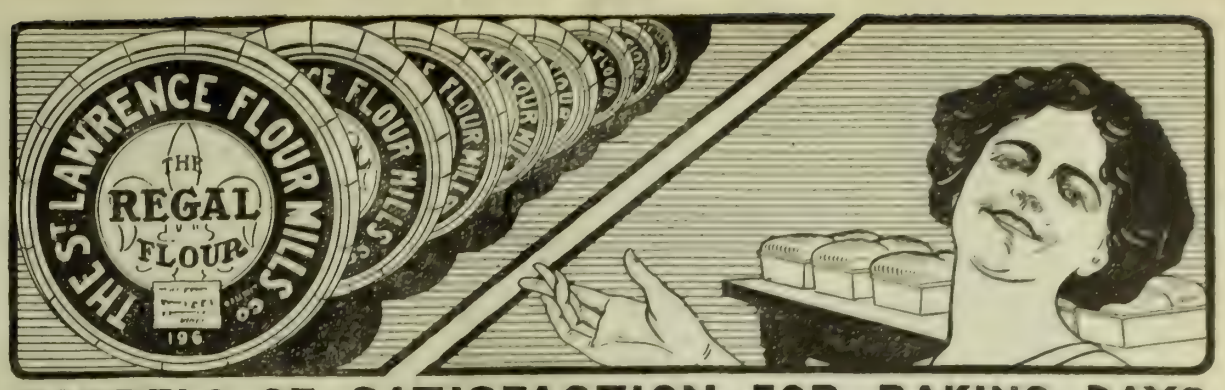
Where the common pasteboard stopper is used there is formed by it and the surrounding ring of glass a nice little circular receptacle for the convenient collection of an especially thick layer of dirt.

Then the neck and rim of the mouth of the bottle are necessarily handled by a dairy man, who has just dropped the reins of his horse, or any rate whose paws are far from clean. Add to this the licks (or worse) bestowed by passing cats and dogs upon the tops of the bottles before they are brought into the house, and one has a veritable garden of soil with living contents of all description.

After the dirt-covered stopper is removed (if it is not poked carelessly or unskilfully down into the bottle) the milk is poured over the side walls of this sunken garden, carrying with it much of the street and cat and dog deposits into the vessels from which we drink. No harm may come of it, but this is not the safest dirt in the world, and it adds nothing to the flavor of the milk.

The milk bottle the top of which is covered with a metal or paper cap that comes down over the outside of the neck of the bottle is much to be preferred, if a dairyman can be found who is so up to date as to use this means of protection; but where one cannot secure this kind of a bottle he can at least place the mouth and neck of the bottle under the faucet and let the water flow vigorously for a few seconds upon the cap and neck. A clean cloth might also be used to clean the top and afterwards the rest of the bottle, followed by shower bath from the faucet. The whole bottle should be clean before opened or set away.

It is not impossible that many cases of disease contracted from milk were due, not to the fault of the dairyman, but to the housewife, who failed to cleanse the top of the bottle before opening and pouring from it. It is at least safer and more cleanly to make use of this simple and lostless precaution against contamination.—Christian Advocate.



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MONTREAL

HUMAN DIETS LACKING IN MINERAL NUTRIENTS

Dr. E. B. Forbes, chief of the Department of Nutrition of the Ohio Experiment Station, says in a recent bulletin, that many American diets today consist too largely of meats and cereal foods which lack the outer seed coats. Such diets are deficient in minerals. Those most commonly lacking are calcium, phosphorus, and iron.

Calcium is abundant in milk, eggs, vegetables, and fruits. Phosphorus is found in large amounts in milk, eggs, peas, beans, and cereal foods containing the outer seed coats. Iron is contained in beef, eggs, prunes, beans, peas, and green vegetables, especially spinach. Foods poor in minerals are polished rice, pearl hominy, white flour, bolted cornmeal, and other cereal foods lacking the outer seed coats. Such foods are likely to be constipating. More liberal use should be made of milk and vegetables, especially for children.

In artificial feeding of infants Dr. Forbes says whey should be used instead of water for diluting cow's milk, because whey does not reduce the mineral content. Whey can be prepared from skim milk by the use of rennet, or from whey powder, which is simply evaporated whey. If whey is made with rennet it must be heated to 154 degrees F. before mixing with milk. Sodium citrate (1 grain per ounce of milk) prepares the casein for digestion and furnishes an alkali element needed by infants lacking capacity to digest fat. Whey is especially valuable in cases of fever in children beyond the age of infancy. It can be used with egg white or orange juice to advantage, according to the Experiment Station expert.

ERRORS IN TRAINING

The greatest and most common error in the training of children is allowed to be irregularity of behavior toward them. At one time they are coaxed, petted, and indulged in every fancy, and at another they are scolded, abused, and cruelly chastised. One moment a mother will be seen fondling her child, and the next pouring out her wrath upon him. Impetuous in temper, she will, for a trifling fault, inflict personal punishment on her infant, and then, moved by compassion or remorse, seize him up in her arms and cover him with caresses. All this is decidedly improper and ruinous to the disposition of children. Let it be remembered that example will go a great way in communicating both good and bad habits to children, and it is required of those who undertake the duty of infant education that they should learn to know themselves and command themselves. Another common error is favoritism in families. One child, because he happened to be born first, or is called by a particular name, or from some other equally absurd cause, or perhaps from mere caprice, is idolized and advanced, while all his brothers and sisters are treated with indifference. Much strife and petty misery have arisen from this system of favoritism, which, wherever it occurs, is discreditable to the parental relation. All the children in a family, whatever be their capacities, and whether male or female, should be treated with equal consideration and kindness. On no account prefer one to another.

A GOOD HAIR WASH

Green soap is a valuable preparation for the woman, especially the dark-haired woman, who would preserve the lustre of her locks. You can make it at home, and so be sure of its purity. Take equal parts of the very best green Castile soap, of water, of alcohol, and of glycerine. Heat the water and shave the soap into it. Then stir it in your double saucepan until it is perfectly smooth. Add the glycerine and stir again very thoroughly. The alcohol is added last of all, mixed with two ounces of essential oil of any preferred scent. A small quantity of arris root, for instance, gives a suggestion of violet, while oil of verbena, or oil of rose geranium, gives an old-fashioned, wholesome scent. Rinse the hair that has been washed with this soap two or three times.

HOW TO TRIM THE LAMP

Good oil can be made to burn badly and poor oil can be made to burn well The following are some rules for getting good service out of the lamp:

The wick, to begin with, should hang straight down in the oil. Then the oil will pass more freely to the flame, and a better light will be obtained.

The wick should be cut with as thin an edge as possible. If it has a broad burning surface at the top the flame will be yellow instead of white.

The chimney should be tight to the brass burner, so as not to let air in where air is not wanted.

The holes at the bottom of the burner should be left open, so as to let plenty of air in where air is wanted.

The wick should not be turned so high that it will char or smoke.

An old chimney lets a better light through than a new one, and a shallow bowl lamp is better for poor grades of oil than a deep bowl lamp.

The 40 Sable Island ponies sold by auction at the Halifax Exhibition realized an average of about $36.50 per head. Prices ranged from $21 to $66. We presume some little boys and girls are having a gay time getting their steeds used to harness.

RED ROSE TEA "is good tea"

Make your FENCEPOSTS ROT-PROOF

DID you know that the ordinarily good fence post which you are accustomed to replacing every four or five years could be made to last 20 years? Creosote treatment does it. And Grade-One Liquid Creosote Oil brings this advantage right to your door because it is creosote in such form that the average home owner and farmer can use it.

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The biggest point about Creosote Oil is that you can apply it by brushing or dipping. No cumbersome, closed-cylinder method. Just as simple as painting. And it penetrates deeper than any other preservative. Stop those costly renewals. Use this wonderful preservative on all wood work exposed to earth or dampness.

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VALUE YOURSELF

There are few more unpleasant traits of character than conceit. A conceited person never makes the friends nor enjoys the good opinion that a less self-conscious person does, but at least he is happy himself. There is a being more unfortunate than he—and that is the man or woman who hasn't a proper appreciation of his or her own worth.

In our anxiety lest our children become conceited, many of us run great risk of going to the other extreme and making them too self-depreciatory, especially if they chance to be inclined a little that way naturally.

A young girl of my acquaintance was brought up by parents who had a horror of bumptiousness and conceit. Her looks, her manners, and her acquirements were praised sparingly, and always the praise was qualified with suc hremarks as "If you act as well as you look you'll do well enough." Secretly they were very proud of her, but she didn't realize it until she was a woman grown—and then she considered it simply the natural pride every parent feels in a normal child, and felt that she did not deserve it at all.

Her poor opinion of herself worked against her in her everyday life, leading her to think, if any difference of opinion arose between her and others, that of course she must be the one who was wrong. It threatened to lead her into marriage with an inferior, because she didn't appreciate her own abilities and possibilities, and it was simply chance—or Providence—which interposed between her an dthe wreck of a life.

Her parents had worked for the very best, but they had failed to allow for a morbid, self-depreciatory strain that ran in her blood, and the result is a woman who all her life long will be hampered by the feeling that she does not amount to much, anyway.

Mothers, if your daughter is pretty, tell her so; but show her that beauty is not the highest gift a woman can receive. If she is bright and capable, tell her so; but lead her to see that these qualities need to be combined with modesty and discretion if they are to be real advantages. Help her to appreciate her own good points, as well as warn her of her faults, and then when the time comes that she must stand alone and make choice herself she will not have a paralyzing sense of inefficiency to hamper her.

A conceited person may not be so agreeable to live with, but he will accomplish more in life, and do it easier, than the one who works in that saddest of mental atmospheres, that of self-recognized inferiority, of timidity, of self-depreciation. Whether this state of mind is correct or not, it is just as bad for the victim as if it were true. Start your girls and boys out with courage, mothers! The yneed every bit they can get.—Ellen Trayne.

PILES CURED at HOME by NEW Absorption Method

If you suffer from bleeding, itching blind or protruding Piles, send me your address, and I will tell you how to cure yourself at home by the new absorption treatment; and will also send some of this home treatment free for trial, with references from your own locality if requested. Immediate relief and permanent cure assured Send no money but tell others of this offer. Write today to Mrs. M. Summers. Box P. 309 Windsor, Ont.

TRY IT

A handful of hops in the brine in which hams and bacon are pickled adds to the flavor of the meat and keeps the brine sweet.

To clean a sewing machine. cover all the bearings with kerosene, run the machine rapidly a few minutes, then with a soft cloth remove all the kerosene and apply machine oil.

Wash silver that is not in daily use in soapy water, wipe, and dry a few minutes in a warm oven, then wrap in tissue paper. Do not allow one piece to touch another. Place tissue paper between. Put the teaspoons and other small pieces in a quart can and hermetically seal. Put the knives. forks, and tablespoons in a two-quart can. They will not tarnish. and will require no polishing when wanted for use.

Keep a box of powdered borax near the work table. Add a little to the water in which the dish towels and dish cloths are washed. They will wash easier, keep sweet longer, and the borax will aid in keeping the hands soft.

To remove iron-rust spots, in the absence of sunshine, soap them well, place a wet cloth on a very hot iron; when the steam rises lay the spots on the cloth and immediately rub with a crystal of oxalic acid, or a damp cloth dipped in powdered crystals. When the spots have disappeared. wash at once in several waters. Guard the acid well, as it is a deadly poison.

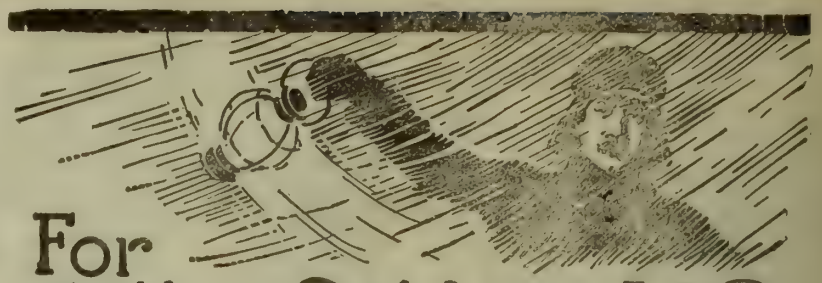
Use carron oil for burns. It is made of equal parts of lime water and linseed oil. Drop a quantity of stone lime into water. stir well. let settle and pour off the top. When mixed with the oil, shake well before applying.

Put a tiny bottle of flaxseed in the traveling bag. Should a cinder be blown into the eye a flaxseed will soon find it, and may save a great deal of pain and an inflamed eye.

A two-quart can of boiling water is an excellent foot warmer if encased in a little flannel bag. It can be rolled about easily. and is of easy application where dry heat is to be used to relieve pain.

Brighten the colors in a carpet by sweeping it with a broom dipped in salt and water, shaking well to remove all surplus water. The broom should be damp, not wet. Use damp earth to remove the dust when carpets are lifted.

Before broiling steak open all the draughts to make the coals bright and clear. Hold the meat for the first few minutes close to the blowing coals, then turn. This will seal the juices. Then it may be finished at a distance of several inches above the coals. From a broiled steak little or no juice should escape.



For Active Outdoor Life

Men whose work heats them up, and exposes them to chilling winter winds, get solid comfort and valuable health protection from

TRADE MARK ATLANTIC UNDERWEAR

It is just as good as it looks—real, honest Maritime wool, soft, strong and durable, spun and knitted into the warmest and best wearing garments you can possibly buy.

The ATLANTIC Trademark is a sure sign of dependable quality in Underwear—a guarantee of your money's worth, and a little more.

ATLANTIC UNDERWEAR LIMITED, MONCTON, N.B. 2

Dizziness

and Specks before the Eyes

Liver derangement is the cause behind these distressing conditions, and only restoration of perfect natural action can effect lasting cure. That is why Dr. Cassell's Instant Relief is so immeasurably superior to the old-fashioned cathartic liver-pills and aperient salts. Such things can only give passing relief by forcing the liver to unnatural action, and have to be continued. Dr. Cassell's Instant Relief strengthens the liver, and so brings about natural action in a natural manner.

Take Dr. Cassell's Instant Relief for constipation, biliousness, torpid liver, sick headache, dizziness, specks before the eyes, flatulence and windy spasms, acidity, heartburn, impure blood, and that dull, heavy feeling which is a sure indication of liver trouble.

Ask for Dr. Cassell's Instant Relief and take no substitute.

Price 50 cents. from all Druggists and Storekeepers,

or direct from the Sole Agents for Canada, Harold F. Ritchie and Co., Ltd., 10, McCaul-street, Toronto. War Tax 2 cents extra.

Dr. Cassell's Instant Relief is the companion to Dr. Cassell's Tablets.

Sole Proprietors: Dr. Cassell's Co., Ltd., Manchester, England.

Dr. Cassell's Instant Relief

Prepared from LIVER TONICS ANTACIDS CARMINATIVES LAXATIVES

GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1-$2-$3 Weekly.
We trust any Honest Person. Write for Catalogue to-day.
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

Fruit Packages

As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and also a 32 Box Crate. Order early and insure prompt delivery. Price on application.

The Hantsport Fruit Basket Co., Limited,
HANTSPORT, N S.

Minard's Liniment Co., Limited.

Dear Sirs—I had a Bleeding Tumor on my face for a long time and tried a number of remedies without any good results. I was advised to try MINARD'S LINIMENT, and after using several bottles it made a complete cure, and it healed all up and disappeared altogether.

DAVID HENDERSON,
Belleisle Station, Kings Co., N. B.,
Sept. 17, 1904.

To every 15 pounds of sausage meat add, with the usual seasoning, a tablespoonful of ginger. It will aid digestion and prevent the unpleasant sensation experienced by many persons after eating highly seasoned meat.

Fruit brought from a cellar to be eaten unpared should be rubber vigorously with a damp cloth to remove the invisible germs or bacteria which flourish in a damp, close atmosphere.

An ounce of carbolic acid in paste will check the ravages of vermin which infest papered walls. A little carbolic acid used in cellar whitewash will prevent the unpleasant flavor that is apt to impregnate milk, meat, and other edibles when kept in a close underground room.

Clean finger marks from painted walls with a damp cloth dipped in whiting. Rub discolorations caused by scratching matches with a cut lemon, followed by the damp cloth dipped in whiting.

Sprinkle coal liberally with salt as it is put into the stove or furnace; it will burn more evenly, last longer, and there will be fewer clinkers.—Sarah E. Wilcox, in Ohio Farmer.

THE ART OF GETTING THINGS DONE

I suppose the art of getting things done, so far as one is personally concerned, depends very much on system and perseverance. There is a homely proverb about the head saving the heels which has a good deal of pith in it. You know how many needless steps may be taken in the course of a morning's baking, for instance. One cook think so feverything which she will require—the spice, the sugar, the butter, the pans, the salt, the sieve, the sundries—and arranges them all on the table in an orderly manner before she begins her mixing and molding. Another has her hands in the dough and remembers that she has not adjusted the oven dampers properly, and that the lard is in the cellar, and the apples are in the barrel, and the milk is in its place. The housekeeper who has no method is obliged to take a half dozen steps for every one which is taken by her orderly friend.

Leaving cooking, and turning to the other kinds of work, we all know women who sometimes see the bottom of the mending basket and occasionally can announce that the family sewing for one while is accomplished and out of the way. I speak less confidently about the sewing problem than any other because it does seem as though a mother's work with the needle is almost endless, let her plan as carefully as she may. Little knees go through the stockings and the trousers so soon; little dresses are so often caught on projecting nails, and little people grow so quickly out of everything that the mother, even when well seconded by a good seamstress, and aided by the flying machine, has still her hands full.

The art of getting things done by other people is quite distinct from, much more difficult, and necessarily much more of a fine art, than that of doing things one's self. Anybody may learn self-government, it would seem. Evidently without it it is useless to attempt directing others.—Christian Globe.

Famous Little No. O Power Mixer

Turns out a batch of thoroughly mixed concrete in less than one minute. Discharges from either side, which other mixers do not do. Also mixes your lime and cement mortar to perfection. Light, durable, highly guaranteed, and has a big reputation. Adapted for a hundred different kinds of jobs. A great money saver. Write for our special offer.

WETTLAUFER BROS., Limited
178 E. Spadina Ave., Toronto, Ont.
188 Barrington Street, Halifax, N. S.

DRINK WATER FOR TONIC AND YOU WILL BE HAPPY

Water taken as a tonic assures a happy disposition, a clear complexion, a good appetite, and a liberal amount of "pep," in the opinion of Dr. R. T. Nichols, physician in the Kansas State Agricultural College.

"The average person does not drink enough water," says Dr. Nichols. "Water may be taken at any time by the average person without injury to the system. Old physicians have advised against drinking water at meal times. Their theory was incorrect, as no harm can result, provided one does not wash down the food.

"Water stimulates the kidneys, the bowels, and the pores of the skin. A good digestive system is almost an assurance of perfect health. Pure water is a tonic for this system, and moreover it is the best tonic a person can take.

"Ice water should not be rdunk by the healthy person no matter how hot the day, for its temperature is too far below that of the body. An athlete should not drink water just before or after a contest. Water taken on an empty stomach cleans out the digestive tract and prepares these organs better to digest the food.

"There is such a thing as taking too much of nature's tonic. An excess of water overworks the excretory organs just as does an overdose of prepared tonic.

"The source of tonic water should be tested several times a year. Although water is the best of tonics, it may carry the worst of germs. Always be sure drinking water is pure."

THE COZY CORNER

The farmhouse is not complete without at least two cozy corners. One inside, and a comfortable place to sit and rest and get the fresh air in summer and sunshine in winter months.

I never realized what comfort could be had with an inclosed porch till my porch facing the south was encased with glass sash. It made a cozy corner at one end that is both inviting and restful after a long day.

For the winter corner I ran a partition across the porch, which made a room enclosed with glass sash. A small stove that does not consume over a ton of coal a season keeps the room very comfortable. Besides, I have plants set on a shelf round the two sides. It makes an ideal sewing room. Several comfortable rockers and a couch and a reading table furnish the apartment nicely.

For the very [illegible] I have a corner of the living room over near the sunshiny windows arranged so any of the chairs can be used for comfort and ease. The table contains all varieties of reading matter and my sewing basket. Life is one sweet song since the advent of the cozy corners. Try it.—

Hot Water When You Need It.

WHAT a blessing always to have hot water quickly when wanted. The special damper under the Kootenay's polished copper reservoir lets in plenty of heat, giving abundance in a jiffy. But why waste heat when you do not need warm water? The handy damper takes care of that, too. Just another instance of Kootenay Economy and efficiency worth knowing more about.

The wash-boiler can be set the long way of the range, if you wish, leaving two of the hot, front holes free for cooking. Wash-day dinners can be just as good as on other days.

McClary's Kootenay Range

You can learn why Kootenay Ranges stay good as new, long after other ranges have to be repaired or replaced,—how the asbestos joints prevent leakage of air or drafts at joints, how the aluminized flues prevent rust. These things are all fully explained in an interesting little booklet. You may have yours by sending the coupon to the factory.

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TEAR OFF THIS COUPON
Name .....
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Kindly send me a copy of your booklet about the Kootenay Range.

EDWARDSBURG GLUTEN FEED

23% PROTEIN GUARANTEED

The Feed for More Milk

This Gluten Feed enables you to feed the cows a properly balanced ration, containing all the Protein they will eat and digest and turn into milk.

We have a book about it. Write for a copy—and learn how many farmers and dairymen are feeding for more milk—and making it pay.

—Fatten Hogs on Edwardsburg Oil Cake. 804

THE CANADA STARCH CO., LIMITED - - MONTREAL

THE HALIFAX EXHIBITION

(Continued from page 781)

Next to Miss La Honda stood Cobequid Helbon Nellie, a cow that gave 84 lbs. milk in one day when four years old. Further down the line was Harding's Shade Lawn Olinda II, first in her class at all Quebec Province exhibitions and grand champion at Quebec. The fourth prize cow was Dickie's Mercena Artalissa, the champion of the Amherst dairy test in 1913.

Two of Dickie's cows sandwiched a Lea cow in the aged cows in milk class.

Lea led the way in the three-year-old cow class with Princess Posch Rooker, although she has been milking since January.

Lea's Ida Rooker's II Vale was first with three of his get, and the sire of the best four animals get of one sire.

Lea's Island Mary was first with two of her progeny.

The best three animals, progeny of one cow, were out of Lea's Aggie Daisy De Kol.

Dickie captured the red ribbon on aged herd, and Harding ran away with similar honors on breeders' young herd.

We doubt if so many high producing Holstein cows ever stood together at any previous Maritime Province show.

Dairy Grades

were few in number, but of good quality. See list of prize winners elsewhere in this issue.

SHEEP

There was a strong showing of well-fitted sheep. A glance at the published list of awards will show who is who as breeders of the respective breeds. There were over 225 head of the best sheep in the Maritime Provinces, and the majority of them were ideals of their respective classes.

SWINE

The showing in the swine classes was rather small this year. Fifty head was all the various breeders mustered. There was a fair showing of Berkshires, Chesters, and Durocs. Yorkshires had only two or three representatives.

Prof. Day, of the O. A. C., Guelph, placed the awards in the sheep and swine classes.

PRIZE WINNERS AT THE HALIFAX EXHIBITION

(Continued from page 785)

Female and 2 of her progeny—1, W. M. Lea.

Aged Herd—1, S. Dickie & Son; 2, W. M. Lea; 3, Harding Bros.

Breeders' Young Herd—1, Harding Bros.; 2, W. M. Lea.

Champion Bull—W. M. Lea.

Champion Female—S. Dickie & Son.

Holstein Specials

Four Animals, the get of one sire—1, W. M. Lea; 2, Harding Bros.; 3, S. Dickie & Son.

Three Animals, the progeny of one cow—1, W. M. Lea; 2, Harding Bros.; 3, S. Dickie & Son.

Grade Jerseys and Guernseys

Cow, 4 years old—1, Mrs. Robert Thompson, Halifax; 2, Allison McDonald.

Cow, 3 years old—1, Allison McDonald.

Heifer, 2 years old—1, Robt. Thompson; 2, Allison McDonald; 3, Thos. Latham.

Heifer, senior yearling—1 and 2, Allison McDonald.

Heifer, calf—1 and 2, Allison McDonald; 3, Thos. Latham.

Herd—1, Allison McDonald.

Cow and 3 of her progeny—1, Allison McDonald.

Grade Holsteins and Ayrshires

Cow, 4 years old—1, Prescott Blanchard; 2, W. M. Lea; 3, Allison McDonald.

Cow, 3 years old—1, W. M. Lea; 2 and 4, Prescott Blanchard; 3, Allison McDonald.

Heifer, 2 years old—1, W. M. Lea; 2, Prescott Blanchard; 3, Allison McDonald.

Heifer, yearling—1, W. M. Lea; 2 and 3, Allison McDonald.

Heifer, calf—1 and 3, John Retson; 2, P. Blanchard; 4 and 5, Allison McDonald.

Herd—1, Prescott Blanchard; 2, W. M. Lea.

SWINE

Berkshires

Boar, over 1 year—1, J. R. Semple, Tatamagouche; 2, McFarlane Bros.; 3, A. C. Sarvant, Overton.

Boar, over 6 months—1, McFarlane Bros.

Boar, over 3 months—1, A. C. Sarvant; 2, S. B. Semple, Tatamagouche.

Sow, over 2 years—1, J. R. Semple; 2, McFarlane Bros.; 3, A. C. Sarvant.

Sow, over 1 year—1, A. C. Sarvant.

Sow, over 6 months—1, S. B. Semple; 2, J. R. Semple; 3, A. C. Sarvant.

Sow, over 3 months—1 and 2, A. C. Sarvant; 3, McFarlane Bros.

Breeding Sow, with litter—1, S. B. Semple.

Herd—1, A. C. Sarvant; 2, J. R. Semple; 3, S. B. Semple.

Yorkshires

Boar, over 6 months—1, E. C. Griffin, Port Williams.

Sow, over 3 months—1 and 2, Roper Bros.

White Chesters

Board, over 2 years—1, Howard Corning.

Boar, over 1 year—1, Jas. Nichollson, Halifax; 2, Howard Corning.

Boar, over 3 months—1, Jas. Nichollson.

Sow, over 2 years—1, 2, and 3, H. Corning.

Sow, over 1 year—1 and 2, H. Corning.

Sow, over 6 months—1, H. Corning.

Sow, over 3 months—1, H. Corning.

Breeding Sow with litter—1, H. Corning.

Herd—1 and 2, H. Corning.

Duroc Jersey

All prizes awarded in this class were captured by J. E. Baker & Son, Barronsfield.

Grades

Sow, over 2 years—1, A. C. Sarvant.

Sow, over 1 year—1, Allison McDonald.

Bacon Hogs

Best Pen, 2 hogs for export—1, Roper Bros.; 2, A. C. Sarvant.

SHEEP

Leicesters

Ram, 2 Shears and over—1, Albert Boswall, Pownal.

Ram, shearling—1, Albert Boswall; 2, S. L. Boswall, Pownal; 3, John Retson, Truro.

Ram, lamb—1, Albert Boswall; 2, S. L. Boswall; 3, John Retson.

Ewe, 2 Shears and over—1, Albert Boswall; 2, John Retson; 3, S. L. Boswall.

Ewe, shearling—1, Albert Boswall; 2, S. L. Boswall; 3, John Retson.

Ewe, lamb—1, John Retson; 2 and 3, Albert Boswall.

Aged Pen—1, A. Boswall; 2, John Retson.

Pen Lambs—1, A. Boswall; 8, John Retson.

Cotswolds

All prizes went to John Tweedy, Emscliffe, P. E. I., without competition.

Lincolns

Ram, 2 years old—1 and 2, Albert Boswall.

Ram, shearling—1, Albert Boswall.

Ram, lamb—1 and 2, Albert Boswall; 3, C. W. Pugsley, River Herbert.

Ewe, 2 years old—1 and 2, Albert Boswall; 3, C. W. Pugsley.

Ewe, shearling—1 and 3, Albert Boswall; 2, C. W. Pugsley.

Ewe, lamb—1, Albert Boswall; 2 and 3, C. W. Pugsley.

Aged Pen—1 and 3, Albert Boswall; 2, C. W. Pugsley.

Pen Lambs—1, Albert Boswall; 2, C. W. Pugsley.

HALLAM'S GUARANTEED
FUR COATS AND SETS

Write to-day for the 1916-17 edition of HALLAM'S FUR STYLE BOOK. 32 Pages illustrated, which shows beautiful stylish fur sets and fur coats moderately priced, and also gives full particulars of HALLAM'S ZOOLOGICAL CONTEST. 54 Prizes. $300.00 in CASH given away free. Address as follows:

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321 Hallam Bldg., Toronto

GUNS, traps, animal bait, nets and supplies are described and priced in our 32 page Sportsman's Catalog which we mail free.

RAW FURS—We are the largest Cash Buyer of Raw Furs direct from the Trapper in Canada.—Our Raw Fur Quotations sent Free.

Shropshires

Ram, 2 years old—1, Geo. L. Boswall; 2, Almon Boswall.

Ram, shearling—1, Geo. L. Boswall; 2, Almon Boswall.

Ram. lamb—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Ewe, 2 years old—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Ewe, shearling—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Ewe, lamb—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Aged Pen—1, Geo. L. Boswall.

Pen Lambs—1, Geo. L. Boswall.

South Downs

Ram, 2 years old—1, E. Saunders, Winsloe Road; 2, J. E. Baker & Sons; 3, O. Saunders, Winsloe Road.

Ram, shearling—1, J. E. Baker & Sons; 2, O. Saunders; 3, E. Saunders.

Ram, lamb—1, J. E. Saunders; 2 and 3, O. Saunders.

Ewe, 2 years old—1 and 2, J. E. Baker & Sons; 3, O. Saunders.

Ewe, shearling—1 and 2, J. E. Baker & Sons; 3, O. Saunders.

Ewe, lamb—1 and 3, O. Saunders; 2, J. E. Baker & Sons.

Aged Pen—1 and 3, J. E. Baker & Sons; 2, O. Saunders.

Pen Lambs—1, J. E. Baker & Sons; 2, O. Saunders; 3, E. Saunders.

Oxford Downs

Ram, 2 years old—1, J. E. Baker & Sons; 2, J. M. Laird & Son.

Ram, shearling—1, J. E. Baker & Sons.

Ram, lamb—1 and 2, J. E. Baker & Sons; 3, J. M. Laird & Son.

Ewe, 2 years old—1 and 3, J. E. Baker & Sons; 2, J. M. Laird & Son.

Ewe, shearling—1, J. M. Laird & Son; 2 and 3, J. E. Baker & Son.

Ewe, lamb—1, J. M. Laird & Son; 2 and 3, J. E. Baker & Sons.

Aged Pen—1 and 3, J. E. Baker & Sons; 2, J. M. Laird & Son.

Pen Lambs—1, J. E. Baker & Sons.

Hampshire Downs

Ram, 2 years old—1 and 2, Cephas Nunn, Winsloe.

Ram, shearling—1, Cephas Nunn; 2, Almon Boswall.

Ram, lamb—1 and 2, Cephas Nunn; 3, Almon Boswall.

Ewe, 2 years old—1 and 3, Cephas Nunn; 2, Almon Boswall.

Ewe, shearling—1 and 2, Cephas Nunn; 3, Almon Boswall.

Ewe, lamb—1, 2, and 3, Cephas Nunn.

Aged Pen—1, Cephas Nunn; 2, Almon Boswall.

Pen Lambs—1, Cephas Nunn; 2, Almon Boswall.

Cheviots

Ram, 2 years old—1, Robert Furness, Vernon Bridge; 2, Cephas Nunn.

Ram, shearling—1, Cephas Nunn; 2 and 3, R. Furness.

Ram, lamb—1, R. Furness; 2, C. Nunn.

Ewe, 2 years old—1 and 2, C. Nunn.

Ewe, shearling—1, C. Nunn; 2 and 3, R. Furness.

Ewe, lamb—1, R. Furness; 2 and 3, C. Nunn.

Aged Pen—1, C. Nunn; 2, R. Furness.

Pen Lambs—1, C. Nunn; 2, R. Furness.

Dorsets

Ram, 2 years old—1, Geo. L. Boswall.

Ram, shearling—1, A. C. Sarvant; 2 and 3, G. L. Boswall.

Ram, lamb—1, A. C. Sarvant; 2, G. L. Boswall.

Ewe, 2 Shears and over—1 and 2, A. C. Sarvant; 3, G. L. Boswall.

Ewe, shearling—1 and 2, A. C. Sarvant; 3, G. L. Boswall.

Ewe, lamb—1 and 3, G. L. Boswall; 2, A. C. Sarvant.

Aged Pen—1, A. C. Sarvant; 2, G. L. Boswall.

Pen Lambs—1, G. L. Boswall; 2, A. C. Sarvant.

Suffolks

Ram, 2 years old—1, A. Parker Thorne, Winsloe Station.

Ram, shearling—1, A. P. Thorne; 2, Reagh Thorne.

Ram, lamb—1, A. P. Thorne; 2, R. Thorne.

Ewe, 2 years old—1, R. Thorne; 2 and 3, A. P. Thorne.

Ewe, shearling—1, A. P. Thorne; 2, R. Thorne.

Ewe, lamb—1, 2, and 3, A. P. Thorne.

Aged Pen—1, A. P. Thorne.

Pen Lambs—1, A. P. Thorne.

Grades (Long Wool)

Ewe, 2 years old—1 and 2, Albert Boswall; 3, R. Furness.

Ewe, shearling—1, John Retson; 2, R. Furness; 3, A. C. Sarvant.

Ewe, lamb—1 and 3, A. C. Sarvant; 2, Albert Boswall.

Pen—1, Allen Boswall; 2, A. C. Sarvant.

(Grades (Medium Wool)

Ewe, 2 years old—1 and 3, O. C. Saunders; 2, C. Nunn.

Ewe, shearling—1, C. Nunn; 2 and 3, O. Saunders.

Ewe, lamb—1, C. Nunn; 2, O. Saunders; 3, J. E. Baker & Sons.

Pen—1, O. C. Saunders; 2, J. E. Baker & Sons.

Fat Sheep (Long Wool)

Wether, shearling—1, Albert Boswall.

Wether, lamb—1, C. W. Pugsley; 2, A. Boswall.

Ewe, lamb—1, Albert Boswall.

Fat Sheep (Medium Wool)

Wether, shearling—1, A. C. Nunn; 2, J. E. Baker & Sons; 3, O. C. Saunders.

Wether, lamb—1 and 3, J. E. Baker & Sons; 2, O. C. Saunders.

Ewe, lamb—1, O. C. Saunders; 2, E. Saunders.

Honey and Apiary Supplies

Display Liquid Extracted Honey in Glass—1, C. Hogan, Greenwich; 2, C. N. Phillips, Middleton.

Weight Versus GAS

TO offset the high price of gasoline, the best engineering talent in the world has perfected light-weight steels and scientific body construction

Despite its scarcity, aluminum is largely used. Weight reduction has been accomplished in every part of the car except the top.

All that is needed in a good top is found in

DU PONT FABRIKOID
RAYNTITE
Single Texture Topping

It is guaranteed one year against leakage. No top has a finer appearance, and although light in weight, it has the required strength and is made to last as long as the car.

Specify RAYNTITE Single Texture Topping for your 1917 car or re-top your auto with this guaranteed, light-weight, long service top material

Ask for free booklet "The Top Question" and samples of Rayntite Topping.

DU PONT FABRIKOID COMPANY
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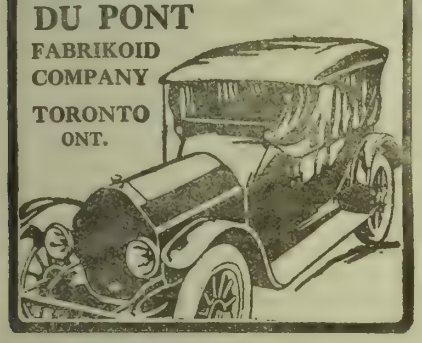

Display Comb Honey in Sections—1, C. Hogan.

Display Extracted Granulated Honey—1, C. Hogan.

Display Extracted Liquid Clover—1, C. Hogan; 2, Chas. Piers.

Display Comb Honey—1, C. Hogan.

Beeswax—1, C. Hogan; 2, C. Piers.

Best Educational Exhibit—1, C. Hogan.

POULTRY

Andalusians: Cock—1, Scott & Warren, St. John. Hen—1, Scott & Warren; 2, Jas. Shortell, Halifax.

Anconas: Cock—1, Thos. Aylward, Falmouth; 2, Hillside Poultry Yard, St. John. Hen—1, Hillside Poultry Yard; 2, R. D. Moore, Halifax. Cockerel—R. D. Moore. Pullet—R. D. Moore.

Light Brahmas: Cock—1, C. C. Gregory, New Glasgow. Hen—C. Smythe, Moncton; 2, C. C. Gregory. Cockerel—1, C. C. Gregory; 2, C. Smythe. Pullet—1, C. C. Gregory; 2, Chas. Smythe.

Buff Cochins: Cock—1, E. C. Gregory, Pt. Williams; 2, Frank Pickeren, Halifax. Hen—1, E. C. Gregory; 2, R. D. Moore. Cockerel—1, Frank Pickeren. Pullet—1, Frank Pickeren.

White Cochin: Cock—1, E. J. Armstrong, Port Williams. Hen—1, E. J. Armstrong. Cockerel—1, E. J. Armstrong. Pullet—1, E. J. Armstrong.

Black Cochin: Cock—1, E. J. Armstrong. Hen—1, E. J. Armstrong.

Partridge Cochin: Cock—1, F. Mitchell, Bedford. Hen—1, Fred Mitchell.

Campines: Cock—1, Jas. Shortall; 2, C. F. Bowes, Halifax; 3, Hillside Poultry Yards. Hen—1, Hillside Poultry Yards; 2, C. F. Bowes. Cockerel—1, Chas. Dobson, Oxford; 2, C. F. Bowes. Pullet—1, Chas. Dobson; 2, C. F. Bowes.

Grey Dorkings: Cock—1, Hillside Poultry Yards; 2, Scott & Warren. Hen—1, Scott & Warren; 2, Hillside Poultry Yards. Cockerel—1, Hillside Poultry Yards; 2, Scott & Warren. Pullet—1, Scott & Warren; 2, Hillside Poultry Yards.

English Red Caps: Cock—1, Robie Morine, Port Williams. Hen—1, Robie Morine; 2, Hillside Poultry Yards. Cockerel—1, Hillside Poultry Yards. Pullet—1, Hillside Poultry Yards.

Hamburgs, Silver Spangled: Cock—1, Seaman & Stewart; 2, John Tweedy, Ernscliffe. Hen—1, Seamon & Stewart; 2, John Tweedy; 3, Scott & Warren. Cockerel—1, Scott & Warren; 2, Thos. Aylward; 3, J. Tweedy. Pullet—1, Thos. Aylward; 2, Chas. Dalton; 3, John Tweedy.

Hamburgs, Black: Hen—1, Hillside Poultry Yards. Cockerel—1, Hillside Poultry Yards. Pullets—1, Hillside Poultry Yards.

Leghorns, White S. C.: Cock—1, C. W. Fawcett, Sussex; 2, Evangeline Poultry Yards, Wolfville; 3, William Beazley, Halifax. Hen—1. E. C. Griffin; 2, C. W. Fawcett; 3, Ernest Craig, Port Williams. Cockerel—1 and 3, McMullen & Walker, Truro; 2 and 4, Ernest Craig. Pullet—1, Evangeline Poultry Yards; 2 and 4, McMullen & Walker; 1, 3, and 5, Ernest Craig.

Leghorns, Brown S. C.: Cock—1, G. Carter, Halifax; 2, Scott & Warren. Hen—1, Scott & Warren; 2, G. Carter. Cockerel—1, M. E. Feethan; 2, Scott & Warren. Pullet—1, Scott & Warren; 2, M. G. Feethan; 3, Percy Rose, Halifax.

Leghorn, Buff, S. C.: Cock—1, Hillside Poultry Yards; 2, W. W. Osborne, New Glasgow. Hen—1, W. W. Osborne; 2, Hillside Poultry Yard. Cockerel—1, Hillside Poultry Yards; 2, W. W. Osborne. Pullet—1, Hillside Poultry Yards; 2, W. W. Osborne.

Leghorns, Black S. C.: Cock—1, Hillside Poultry Yards; 2, Charles Dalton, Port Williams. Hen—1, Hillside Poultry Yards; 2, Chas. Dalton. Cockerel—1 and 2, McMullen & Walker. Pullet—1 and 2, McMullen & Walker.

Leghorns, White R. C.: Hen—1, Scott & Warren. Cockerel—1, McMullen & Walker; 2, Thos. Tanner, Greenwich. Pullet—1, McMullen & Walker; 2, Thos. Tanner.

Leghorns, Brown R. C.: Cock—1, Scott & Warren. Hen—1, Scott & Warren.

Leghorns, Black: Cock—1 and 2, C. Smythe. Hen—1 and 2, Chas. Smythe.

Langshans, Black: Cockerel—1 and 2, Chas. Smythe. Pullet—1 and 2, Chas. Smythe.

Minocras, White S. C.: Hen—1, John Feethan, Halifax.

Minocras, Black S. C.: Cock—1, Seaman & Stewart; 2, G. Carter. Hen—1, and 2, Seaman & Stewart. Cockerel—1, Seaman & Stewart; 2, Rockingham Poultry Yards. Pullet—1, Seaman & Stewart; 2, Forest Hill Poultry Yards.

Minocras, Black R. C.: Pullet—1, Hillside Poultry Yards.

Minocras, White R. C.: Cockerel—1, Scott & Warren. Pullet—1, Scott & Warren.

Orpingtons, Bug: Cock—1 and 2, C. P. Thorne, Charlottetown; 3, Seaman & Stewart. Hen—1, Seaman & Stewart; 2, Seaman & Stewart; 3, Helen W. King, Halifax. Cockerels—1 and 3, E. S. Tracey; 2, W. M. Keeler, Dartmouth; 4, Seaman & Stewart; 5, R. G. Messervey, Halifax. Pullet—1 and 3, C. Piers, Dutch Village; 3 and 4, E. S. Tracey; 5, Wm. Keeler.

Orpingtons, White: Hhen—1 and 2, G. Carten. Cockerel—1, C. Dalton. Pullet—1, Chas. Dalton.

Orpingtons, Black: Cock—1, Scott & Warren. Hen—1, G. A. Thomson, Halifax; 2, Scott & Warren. Cockerel—1, Jas. Carmichael, Halifax.

Plymouth Rocks, Barred: Cock—1 and 2, Percy Carey Yarmouth; 3, Kentville Poultry Yards; 4, Jno. R. Sparks, New Glasgow; 5, Kentville Poultry Yards. Hen—1, Vincent Gilfoy; 2 and 4, G. R. Gifford, Halifax; 3, Evangeline Poultry Yards; 5, Percy Carey. Cockerel—1 and 3, Kentville Poultry Yards; 2, G. R. Gifford; 4, Duncan C. Fraser, Antigonish; 5 and 6, Wm. Bevis, Halifax. Pullet—1 and 3, Percy Carey; 2, Wm. Bevis; 4 and 5, Kentville Poultry Yards; 6, Evangeline Poultry Yards.

Plymouth Rocks, White: Cock—1, Mr. Freehill, New Glasgow; 2, C. C. Gregory. Hen—1, Mr. Freehill; 2, C. C. Gregory. Cockerel—1, Albert Boswell, French Port; 2 and 3, Duncan C. Fraser; 2 and 4, Albert Boswell.

Plymouth Rocks, Ruff: Cock—1, W. W. Osborne. Hen—1, W. W. Osborne; 2, Forest Hill Poultry Yards, Rockingham; 3, M. E. Feetham. Cockerel—1 and 2, W. W. Osborne. Pullet—1 and 2, W. W. Osborne.

Polands, White Crested Black: Cock—1, E. J. Armstrong; 2. E. C. Griffin. Hen—1, E. J. Armstrong.

Rhode Island Red S. C.: Cock—1, E. C. Griffin; 2, Kentville Poultry Yards; 3, John Higson, Stellarton; 4, Hillside Poultry Yards; 5, Robie Morine. Hen—1 and 6, E. C. Griffin; 2, John Higson; 3, C. W. Lovett, North Sydney; 4, Hillside Poultry Yards; 5, W. H. Henry, Shubenacadie. Cockerel—1, E. C. Griffin; 2, Master Gordon Mahoney, Wolfville; 3, Kentville Poultry Yards. Pullet—1, E. C. Griffin; 2 and 3, W. H. Henry; 4, Master Gordon Mahoney.

Rhode Island Red R. C.: Cock—1, E. S. Tracy, Halifax; 2, J. Higson. Hen—1, E. S. Tracy; 2, J. Higson; 3, Seaman & Stewart; 2, H. F. P. Cross, Halifax. Pullet—1, E. S. Tracey; 2, Miss Jean Terrace, Springhill.

Spanish, White Faced Black: Hen—1, Hillside Poultry Yards.

Wyandottes, Silver Laced: Cock—1, Hillside Poultry Yards. Hen—1, Hillside Poultry Yards. Pullet—1, J. Higson; 2, Hillside Poultry Yards. Cockerel—1, John Higson.

Wyandottes, Golden: Cock—1, Hillside Poultry Yards. Hen—1, Hillside Poultry Yards; 2, S. Moss, Stellarton. Cockerel—1, Hillside Poultry Yards. Pullet—1, Hillside Poultry Yards.

Wyandottes, Columbian: Cock—1, C. H. Bowles. Hen—C. F. Bowes. Cockerel—1 and 2, Evangeline Poultry Yards. Pullet—1 and 2, Evangeline Poultry Yards.

Wyandottes, White: Cock—1, Spring Park Poultry Yards, Charlottetown; 2, Evangeline Poultry Yards; 3, Winston Proctor, Halifax; 4, Kentville Poultry Yards. Hen—1, Spring Park Poultry Yards. Cockerel—1, Wm. Brinelow, Sydney Mines; 2, Evangeline Poultry Yards; 3, C. P. Thorne; 4, A. J. Keddy, Dartmouth; 5 Kentville Poultry Yards; 6, McMullen & Walker. Pullet—1, Kentville Poultry Yards; 2, Wm. Brinelow; 3 and 5, G. M. Pettet, Yarmouth; 4, F. C. McLeod, Halifax; 6, A. J. Keddy.

Wyandottes, Black: Hen—1, Scott & Warren.

Wyandottes, Buff: Cock—1, Wm. Beazley; 2, Cyril Kirby, Halifax. Hen—1, Cyril Kirby; 2, Fred Morine. Cockerel—1 and 2, Fred Morine. Pullet—1 and 2, Fred Morine.

Wyandottes, A. O. V.—1 and 2, Seaman & Stewart; 3 and 4, F. Morine; 5, David Gray, Halifax. Hen—1, 2, and 5, Seaman & Stewart; 3, Fred Morine; 4, David Gray. Cockerel—1, 2, and 3, Seaman & Stewart. Pullet—1, Seaman & Stewart.

A MIRACULOUS CURE OF CHOLERA INFANTUM By DR. FOWLER'S EXTRACT of WILD STRAWBERRY.

Cholera Infantum is one of the most common summer complaints of infants, and many die who could be saved if properly looked after on the first sign of the trouble.

It begins with a profuse diarrhoea very often accompanied by vomiting and the matter ejected from the stomach has a bilious appearance. The child rapidly loses flesh and becomes weak and languid.

On the first sign of cholera infantum Dr. Fowler's Extract of Wild Strawberry should be administered, and thus check the diarrhoea before it becomes serious.

"Dr. Fowler's" has been on the market for the past seventy years, so you are not experimenting with some new and untried remedy when you use it, but be sure and get "Dr. Fowler's" when you ask for it.

Mrs. B. A. Cirwell, Rossway, N.S., writes: "I can recommend Dr. Fowler's Extract of Wild Strawberry most highly. A friend of mine had a little daughter who was ill with cholera infantum, and was given up by the doctors. The little one's mother asked me to come in and see the child. I told her I had a bottle of "Dr. Fowler's," and asked her if she would try it. When the bottle was half used the child was well. This cure was a miraculous one, for I thought the child was dying at the time."

The genuine Dr. Fowler's Extract of Wild Strawberry is manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

Price, 35 cents.

BANTAMS

Note:—C., Cock; H., Hen; R., Cockerel; P., Pullet.

Black—Spring Park Poultry Yards, 1C. 1H.

White—Spring Park Poultry Yards, 1C. 1H.

Brahmas, light—Spring Park Poultry Yards, 1C. 1H.

Cochins, black—Spring Park Poultry Yards, 1C. 1H.

Mrs. Willard Turner, 2C. 2H.

Fred Morine, 3C. 3H.

Cochins, Buff—Spring Park Poultry Yards, 1C. 1H. Allan D. McLellan, 2C. G. Carten, 2H.

Cochins, White—Spring Park Poultry Yards, 1C. 1H. C. W. Lovett, 2C. Chas. Smythe, 3C. 3H. 1H.

Black-Red—Scott & Warren, 1 & 2C., 1 and 2H., 1H., 1P.

Black-Red—Scott & Warren, 1 & 2C., 1 & 2H., 1R., 1P.

Brown-Red—Frank Shortall, 1C. 1H.

Duckwing, Golden—Scott & Warren, 1C. 1H.

Duckwing, Silver—Scott & Warren, 1C., 1H., 1R., 1P.

Red Pile—Scott & Warren, 1 & 2C., 2H., 1R., 1P. Spring Park Poultry Yards, 1H.

Japanese, White—Spring Park Poultry Yards, 1H.

Polish, White—Spring Park Poultry Yards, 1C. G. Carten, 1 & 2H., 1P.

Seabright, Golden—Spring Park Poultry Yards, 1C. 1H. Scott & Warren, 2H.

A. O. B.—Spring Park Poultry Yards, 1C. 1H. Allan D. McLellan, 2C. 2H.

Pens of Poultry

Barred Plymouth Rocks—1, C. W. Fawcett; 2, J. R. Gifford; 3, Vincent Gilfoy; 4, J. W. Sawler, Halifax.

Barred Plymouth Chicks—1, W. H. Allen, Penniac; 2, Kentville Poultry Yards; 3, J. R. Gifford.

White Plymouth Rock Fowls—1, Al-

(Continued on page 804)

Money-Making Dairy Farm $3300

12 Cows and Young Stock

Pair oxen, hogs, hens, tools, wagons, sleds and machinery with fitted stove wood and hay, potatoes, corn, apples, etc., etc., all included by owner having other business. 180 acres near up-to-date village; maple sugar equipment for 700 trees; 8-room house, telephone; 16-cow barn, poultry house. Buildings in good repair with running spring water. It is a dandy, now going for a song; easy terms arranged. See page 8, "Strout's Big Bunch of Bargains," copy free. E. A. STROUT FARM AGENCY, Dept. 2612, 94 Washington St., Boston.

TRAPPERS!
Send your
RAW FURS
to JOHN HALLAM

and receive highest cash prices. We send money the same day the furs are received. Charge no commissions—and pay all charges. We have paid out millions of dollars to thousands of trappers in Canada who send their furs to us because they know they get a square deal, and receive more money for their furs. You will also. We buy more furs from trappers for cash than any other five firms in Canada.

FREE Hallam's Trapper Guide (96 pages)
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Hallam's Raw Fur Quotations
Hallam's Fur Style Book (32 pages)
Sent free on request. Address as follows:

JOHN HALLAM Limited
142 Hallam Building, Toronto

FILLING GULLIES

I believe I have something of interest to your readers, and trust that you will be able to spare space for the following:

In June, 1914, I was clearing some land for a farmer in Miegs County, Tennessee. In plain sight of his place, on the top of a hill, stood a nice six-room house. Running in all directions down the hill were big red gullies.

I inquired the name of the owner of the place from the party for whom I was then workin, and then called on her to suggest a practical and economical way of filling the gullies. I told her I could level the land by using dynamite; that I would guarantee satisfaction.

We soon agreed on a price, and I put two men at work. There were fifteen acres in the field, and fully three-fourths of it was more or less badly gullied. One of them was 500 feet long, running obliquely down the hill, and averaged 6 feet in depth. The rest were of smaller size, but ran in almost every direction down the hill.

My method was as follows: A line of bore holes was put down a little way back from the edge of the gully. Each hole was then loaded with a low grade of dynamite, the charges connected up in the shape of a blasting circuit, and fired electrically. The blast pushed the soil over into the gully, which filled it sufficiently to permit of the use of plows to continue the work of leveling.

This work left the dirt in the fills softer than on the intervening ground that had not been disturbed. It would have been better if this other ground could have been subsoiled by the use of small charges of dynamite spaced ten or fifteen feet apart, so as to break up the hardpan and make all ground on the plot equally capable of absorbing rainfall. As the lady was a poor widow and could not afford this expense, this was not done.

The entire cost of the work to her was $85.00. This does not include the plowing, which was done by a relative, and for which no charge was made.

The fifteen acres were planted to wheat at a total cost of $17.50. The threshing and harvesting were also done by a relative with no cost to the owner. The yield was twenty bushels of wheat per acre, and was sold for $308.00. Her cleared gain on one season's crop as a result of the work I did for her was $205.50.

This year the land is in grass, of which there is a very fine stand.

As there is a good deal of gullied land in the south that could be reclaimed at small expense by the method described above, I thought your readers would like to know about it. If any one doubt the truth of this story, I am prepared to give the names and addresses of twelve leading men in Meigs County, who are themselves owners of large river farms, and who will vouch for what I say.—J. E. Hall, St. Elmo, Tenn.

PREVENTING DAMAGE FROM FRESHETS

A good deal of damage is done every spring by freshets. This is due partly to the narrowness of creeks and ditches which haven't sufficient capacity to carry off the abnormal flow of water temporarily poured into them.

Widening these creeks and ditches is hard work for which it is difficult to employ labor. Recently I have been experimenting with a method of doing this work and which I have found to be the cheapest and quickest method I have ever heard of. I get right into the creek or ditch and punch holes sloping slightly downward into or under the banks. These holes are about two and a half or three feet down and about 24 inches apart. In each hole I load a cartridge of sixty per cent straight dynamite which is well tamped in. I use a cap only in the center hole, as the soil, being thoroughly saturated, will transmit the explosion down the line from hole to hole.

A blast like this under the banks will break down a large amount of earth, most of which slides down into the creek or ditch. The first freshet that comes along completes the work by washing these deposits down the stream. Of course this method is practicable only when there is considerable flow of water.

I thought your readers who are troubled with freshets might like to know about this method, as the work takes very little time and the cost of the explosives is very small compared to the damage the freshet would do, and little compared to what labor would cost to widen the creek or stream in any other way.—M. C. Potter, Bellevue, Iowa.

CAUSE AND CURE FOR BLOAT

Bloat is a common derangement in cattle, and every year causes the death of many animals. Green, succulent grass in the spring or late in the fall is likely to cause more or less bloat in cattle. The most dangerous bloat is that caused by eating clover when it is wet, either with dew or rain. Trouble can nearly always be prevented by feeding some dry food to cattle before turning them out on soft, succulent grass, and never turning cattle or horses on wet, gree nclover, especially second growth clover. This kind of food, even if the animal does not eat too much of it, will often cause bloat. It is very likely to undergo rapid fermentation, causing a large quantity of gas in the rumen, which results in great distention in a few minutes, pressing the contents of the abdomen against the lungs, causing suffocation and death.

There are two kinds of bloat. One is where the animal may be badly swollen but not in a condition likely to cause death quickly. In such a case the animal will be swollen tight and may make a moaning sound every time it breathes. If made to move it will grunt, but does not show great distress. The treatment in this case is to give two ounces aromatic spirits ammonia at a dose i na pint of cold water every half hour until the swelling goes down, which it will likely do after the first or second dose. If aromatic spirits of ammonia is not on hand, give two tablespoonfuls each of baking soda and ground ginger mixed in a pint of water, and repeat in half an hour if not relieved.

In dangerous bloat the animal is greatly swollen, the back is arched, the mouth is open, and the tongue protrudes from the mouth, and there is a passing of feces and urine every few minutes. In this case if the animal is not relieved at once it will die in a few minutes. As there is not time to give medicine, the operation of tapping should be performed at once. The best instrument for this operation is a trochar and canula, but the farmer might not have one, and if he had there would not be time to go from the field to get it.

In such a case a pocket knife should be used and an opening made on the left side, one hand's breadth in front of the haunch and the same distance down from the spines of the vertebra. The opening made with the knife should be large enough to admit the finger as soon as the knife is drawn out, for if this is not done little of the gas will get out. There is no danger in making an opening in this part of the rumen, or paunch, as it is so often called, so one should not hesitate until it is too late to save the life of the animal. There is no after treatment needed, as the wound soon heals.—Dr. Donald McIntosh, Illinois.

DIEU ET MON DROIT

DEPARTMENT OF THE NAVAL SERVICE.

NOTICE OF SALE

SEALED TENDERS, address d to the undersigned, w ll be received up to noon of the 1st October, 1916, for the purchase of the

Dog-Fish Fertilizer

to be produced at the Dog-Fish Reduction Works at Canso, N. S., and Clark's Harbor, N.S., during the season of 1916 The total quantity that will be produced is estimated at betw en 150 and 200 tons of 2,000 pounds

No particular form is necessary for use in tendering, but envelopes should be distinctly marked across the face, "Tenders for Dog-Fish Fertilizer."

The fertilizer will be put up in bags of 100 pounds each, and a charge of 15 cents will be made for each bag, additional to the price paid for the fertilizer.

Consistent with the price offered, tenders from bona fide agriculturists will receive first consideration; the right is reserved, however, to reject any or all tenders.

Tenders from non-residents of the provinces of Nova Scotia, New Brunswick and Prince Edward Island will not be considered and guarantees must be given that the fertil z r will not be disposed of or used outside of these provinces.

Tenders should state the quantity required in bags, and the minimum quantity acceptable at the price offered, and from which point it is desired shipment should be made The price offered should be on the basis of so much per 100 pounds.

Terms of s le are cash within ten (10) days of acceptance of tender fo specific quantities, all charges for transportation from Works to be borne by the purchaser Failure to remit within the time specified will result in the cancellation of tender without further notice, and the allotment being diverted to the next highest tender, or such other as may be in order.

Remittances should be made payable at par to the Department of the Naval Service at Ottawa. Bank cheques will not be accepted unless certified.

G. J. DESBARATS,
Deputy Minister of the Naval Service.
Department of the Naval Service,
Ottawa, August 28, 1916
Unauthorized publication of this advertisement will not be paid for.

Isn't he a

Fine Child?

What every Mother should know

Every mother should know that Dr. Cassell's Tablets are just as suitable for children as they are for grown-up people. Their splendid nutritive and vitalising properties soon overcome any tendency to nervousness or weakness in the little ones, and lay the foundation of a strong constitution for after years. They make weakly children thrive.

Dr. Cassell's Tablets should be given to all children who are in any way delicate, fretful, or of weakly build. The results will be improved assimilation, a well-nourished frame, and bright, happy child health. There is no difficulty in getting children to take Dr. Cassell's Tablets. Full directions and dosage are given with each packet.

Dr. Chas. Botwood, D.Sc., Ph.D., &c., an English Scientist, says —"As a safe and reliable remedy for loss of flesh and vigour, nerve affections, and bodily weakness, Dr. Cassell's Tablets appear to be unique. I have no hesitation in recommending them for young or old."

Dr. Cassell's Tablets

Dr. Cassell's Tablets are Nutritive, Restorative, Alterative, and Anti-spasmodic, and the recognised remedy for

Nervousness	Sleeplessness	Dyspepsia
Nervous Breakdown	Anæmia	Palpitation
Neurasthenia	Malnutrition	Kidney Trouble

Specially valuable to nursing mothers and women of middle life.

Sold by Druggists and Storekeepers throughout Canada. Prices: One tube 50 cents, six tubes for the price of five. War tax 2 cents per tube extra.

Free Sample On receipt of 5 cents to cover mailing and packing, a generous free sample will be sent at once. Address: Harold F. Ritchie & Co., Ltd., 10, McCaul Street, Toronto.

Sole Proprietors: Dr. Cassell's Co. Ltd., Manchester, Eng.

AVERAGE VALUE OF FARMS IN CANADA

According to late figures from the Bureau of Census and Statistics of Ottawa, $38.90 is the estimated average value per acre of farms in Canada. These figures include all lands used for agricultural purposes of any kind, improved or unimproved, and the value of houses, barns, and other farm buildings. The average value per acre as thus estimated is as follows for each province: British Columbia, $125; Ontario, $52.49; Quebec, $51.36; Prince Edward Island, $37.64; Manitoba, $30.36; Nova Scotia, $28; Saskatchewan, $24.20; Alberta, $23.15; New Brunswick, $22.48.

The comparatively high values in Ontario and Quebec are probably due to intensive and well-developed farming, especially in the southern sections, where seasons are more favoralbe than in many other provinces, while the exceptionally high figure attained by British Columbia is said to be the result of the flourishing condition of fruit raising there. New Brunswick's low figure is chiefly due to the fact that, while large tracts are statistically treated as farms, in many cases these are more or less neglected beyond superficial cultivation, and to the further fact that its people have largely depended upon lumbering for their livelihood.

THE RETIRED FARMER

It has been the popular thing for some time to knock on the retired farmer. To quote some people, "the retired farmer is the meanest, stingiest piece of kiln-dried humanity that every bothered the good people of this country." Some if that may be true of the farmers who leave the farm to go to the city. I know none of that sort. It is certainly not generally true of a farmer that retires to his community town, where with a cow, a garden, some chickens, and an auto he finds exercise and contentment. Such men are called a drawback on the community, yet in my neighboring town a group of retired farmers by petition started a new sewer district for their neighborhood though opposed by some residents of that section.

One of the biggst, most unselfish men I know of is a retired farmer in central Iowa. Content with his little "farm" and his church work, located where he can watch and counsel his children, this grand old man is a tower of strength in his community. There are retired farmers whose vision of life is small. The same is true of some retired buiness men of any kind. But as long as there are among retired farmers men like the one mentioned it is the height of foolishness to condemn all.—Geo. W. Godfrey, Iowa.

COMPOSITION OF TURNIPS

According to the result of analysis, the bulb of the turnip or swede is not uniform in composition, and it is generally supposed that the part of the bulk which is covered by the soil is richer than the part which is above the soil. The investigations show that this assumption is incorrect and that—

1. The upper half of a turnip contains a higher percentage of dry matter than the lower half. This is in direct opposition to the common opinion that the lower half is the richer.

2. The outside part next the rind is richer in dry matter than the inner part. As we proceed from the outside towards the centre the dry matter decreases. This is true no matter in what direction we proceed, but the difference from the crown to centre is greater than the difference found in any other direction.

It is well known that individual roots of the same species grown on the same land side by side vary considerably in composition. Generally speaking, large bulbs are lower in dry matter than small ones, but both large and small vary very much among themselves.

Saves Shortening

One of the first things you notice, after "Beaver" Flour comes to your house, is that you are using *less shortening* than you used with western spring wheat flours.

You also notice that the Pie Crusts, Cookies and Doughnuts are lighter and flakier—that the Bread Rolls and Biscuits have a delicate flavour, a delightful, nutlike, homey flavour that is doubly welcome after the tough, almost tasteless bread you used to make with western spring wheat flours.

BEAVER FLOUR

Milled of Blended Wheat

is really two flours in one, for two kinds of wheat are used in blending. "Beaver" Flour contains the choicest Ontario winter wheat, strengthened with western spring wheat.

This gives you the finest pastry flour that can be milled—with the right strength to make a good size loaf of bread or a big pan of snowy Rolls.

More than that, everything made of "Beaver" Flour has a deliciously appetizing, nutlike flavour that is entirely lacking in the strong, western spring wheat flours.

Try it yourself—see how you save shortening—see how you come to depend on the even strength and quality of this famous flour—see how everything tastes so much better. Your dealer should have "Beaver" Flour—or will get it for you.

DEALERS—write for prices on Feed, Coarse Grains and Cereals. 199

THE T. H. TAYLOR CO. LIMITED, - - CHATHAM, Ont.

MOSQUITO NUISANCE

The residents of West Haddonfield were for years pestered and tormented by mosquitoes which, it was learned, upon investigation, were propagated in stagnant pools between the railroad and Haddon Avenue. It was found practically impossible to drain these to the street gutters, hence another method had to be employed, and it was decided to sink the water into the ground. Under the supervision of L. Z. Lawrence a heavy charge of dynamite was sunk and discharged about twenty feet under the surface. This caused the pools to disappear in short order, and no water has accumulated at this point up to the end of the year.

It might help other infested places if the above method was tried.

FALL AS A TIME TO PAINT

A great deal of painting is done in the spring and early summer, principally because people like to have their buildings look well at the season when they can be out of doors and when nature gives a freshly painted building a most beautiful setting. It should be remembered, however, that there are advantages to fall painting.

At this season of the year buildings are usually thoroughly dry. When the pores of wood are filled with water, or have only dried out at the surfaee, the the oil in the paint cannot enter. The paint seals up a certain amount of moisture in the wood and thus does not accomplish what it should by way of preservation. With dry wood the pores are open and empty to receive the oil, and thus most effectively preserve the wood.

There is less danger of having the paint washed and spotted by rains, and flies and gnats are gone.

CANADA'S SUGAR BEET PRODUCTION

It is estimated by the Canadian Census and Statistics Office that 18,000 acres were devoted to the growing of sugar beet roots in Canada in 1915, all in the Province of Ontario, for the manufacture of beet sugar, as compared with 12,100 acres in 1914. The total estimated yield of roots in 1915 was 141,000 tons, compared with 108,600 tons in 1914, the average yield per acre being 7.83 tons, compared with 8.98 tons in 1914. At an average price of $5.50 per ton, the total value of the crop in 1915 was $775,500, compared with $5.00 per ton and a total value of $651,000 in 1914. The production of refined sugar made from Canadian sugar beets grown in 1915 was returned as $36,838,267 pounds, compared with 27,345,248 pounds in 1914, and 23,964,272 pounds in 1913.

LIMESTONE APPLICATION

"My soil is acid and I wish to apply ground limestone. At what rate per acre had I best use it?"—E. L. T.

The amount of ground limestone which should be applied to the acre depends upon the degree of the acidity in the soil. If the soil is very acid, four tons of the limestone will be none too much, while from one to two tons will be sufficient if the soil is only slightly acid.

If a curtain or portiere pole is rubbed with hard soap before being put up, the draperies will slip on easily.

PRIZE WINNERS AT THE HALIFAX EXHIBITION

(Continued from page 801)

bert Boswell: 2, D. C. Fraser; 3, E. Frehill.

Wyandottes, White Fowls—1, C. W. Fawcett; 2 and 3, A. J. Keddy.

Wyandottes, White Chicks—1, Evangeline Poultry Yards.

Wyandottes, Golden Fowls—1, S. Moss.

Brahmas, Light Fowls—1, Ira Noonan, Halifax.

Brahmas, Light Chicks—1, Charles Symthe.

Rhode Island Reds, Fowls—1, W. Henry; 2, E. C. Griffin; 3, John Higson.

Rhode Island Red, Chicks—1, E. C. Griffon; 2, Robie Morine; 3, Seaman & Stewart; 4, John Higson.

Brown Leghorns, Fowls—1, Percy J. Rose, Halifax; 2, Fred Mitchell, Bedford.

Brown Leghorns, Chicks—1, Evangeline Poultry Yards; 2, Ernest Craig; 3, Robert Stairs.

Black Minorcas, Fowls—1, Seaman & Stewart.

A. O. V., Fowls—1, G. A. Thompson, Halifax; 2, Chas. Smythe; 3, E. J. Armsrtong; 4, John Feetham; 5, Wm. Ross, Halifax.

A. O. V., Chicks—1, Helen M. King; 2 and 3, Seaman & Stewart.

Barred Plymouth Rocks, Fowls—1, C. W. Fawcett; 2, J. R. Gifford; 9, Vincent Gilfoy; 4, J. W. Sawler, Halifax.

Barred Plymouth Chicks—1, W. H. Allen, Peniac, N. B.; 2, Kentville Poultry Yards; 3 ,J. R. Gifford.

White Plymouth Rock Fowls—1, A. Boswell; 2, D. C. Fraser; 3, E. Frehill.

TURKEYS

Bronze—Thos. Aylward, 1C, 1H, 1R, 1P Robie Morine, 2C.

White Holland—Thos. Aylward, 1C, 1H, 2R, 1P. Victor Aylward, 1R.

Black—Albert Boswell, 1C, 1H.

Grey—Sharpe & McNeil, 1C, 1H.

GEESE

Toulouse: Gander—1, T. C. Latham; 2, Sharp & McNeil; 3, Thos. Aylward.

Goose—1, Sharp & McNeil; 2, Thos. Latham; 3, Bertram Goodspeed, Penniac, N. B.; Thos. Aylward.

Young Gander & Goose—1, Thos. Aylward.

White Embden Gander—1 and 2, Albert Boswell; 3, B. Goodspeed.

Goose—1 and 2, Albert Boswell; 3, B. Goodspeed.

Young Gander and Goose—1 and 2, A. Boswell.

African Gander—1, John Tweedy; 2, E. C. Griffon; 3, B. Goodspeed.

Goose—1, John Tweedy; 2 and 3, E. C. Griffon.

Young Gander and Goose—1, E. C. Griffon; 2, John Tweedy.

Common Gander and Goose—1, C. F. Bowes.

DUCKS

Rouen: Drake—1, Sharp & McNeil; 2, Wm. O'Brien & Sons.

Duck—Wm. O'Brien & Sons; 2, Sharp & McNeil.

Young Duck—1, C. F. Bowes; 2, V. Aylward.

Young Drake—1, C. F. Bowes; 2, V. Aylward.

Young Duck—1, C. F. Bowes.

Pekin Drake—1 and 3, Albert Boswell; 2, C. P. Thorne.

Duck—1, Albert Boswell; 2, C. P. Thorne; 3, Spring Park Poultry Yards.

Young Drake—1, A. Boswell; 2, R. Morine; 3, C. F. Bowes.

Young Duck—1, R. Morine; 2, A. Boswell; 3, C. F. Bowes.

Indian Runner Drake—1, Spring Park Poultry Yards; 2, Wm. O'Brien & Sons; 3, C. F. Bowes.

Duck—1, Spring Park Poultry Yards; 2, C. F. Bowes; 3, Wm. O'Brien & Sons.

Young Drake—1, Thos. Aylward.

Young Duck—1, Thos. Aylward; 2, Victor Aylward.

Aylesburg Drake and Duck—1, A. Boswell.

Young Drake and Duck—1, Almon Boswell.

Wild Drake and Duck—1, Sharp & McNeil.

Young Duck—1, Albert Boswell.

EGGS, FRESH GATHERED

One Dozen Specials—1, McMullen & Walker; 2, Spring Rock Poultry Yards.

One Dozen Extras—1, McMullen & Walker; 2, Wm. Beazley; 3, Miss A. Piers, Dutch Village.

One Dozen No. 1 Specials—1, Spring Park Poultry Yards; 2, Chas. Dobson, Oxford; 3, B. Goodspeed; 4, Mrs. A. Piers.

Six Dozen Specials—1, Spring Park Poultry Yards.

No. 1 Specials—1, Spring Park Poultry Yards.

Eggs Shown in Commercial Packages—Spring Park Poultry Yards, 1st, twelve dozen specials, twelve dozen extras, twelve dozen No. 1's; 2nd, 30 dozen case, Chas. Dobson; 2nd, twelve dozen No. 1's; Wm. McLeod, Pugwash Junction, 1st, 30 dozen case.

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are the only sure kind to make your hunting trip the success you expect it to be. Velocity and accuracy are the two important features in big game ammunition.

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embody fully these requirements and supplement them with the reliability that comes from high quality materials, skillful workmanship and careful testing.

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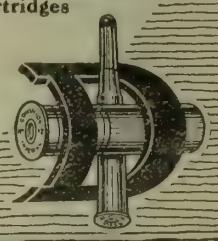


THE CHARLOTTE COUNTY EXHIBITION

A Maritime Farmer representative visited the Charlotte County Exhibition at St. Stephen last week. Having to leave for Halifax before the judging was completed, he was unable to procure a copy of the prize winners' lists in time for publication in this issue of The Maritime Farmer.

Thousands of visitors thronged the fair grounds. The main building contained exhibits made by the leading dealers in the border town, but perhaps the outstanding feature of this building was the interesting exhibit of vegetables grown with Dominion fertilizers which are manufactured in the town of St. Stephen. Mr. Frank Hunter, the genial traveller for this enterprising firm, was kept busy showing the various exhibits to interested farmers and explaining the composition of the various samples of fertilizers he had at the fair.

The agricultural products display was not, in point of quantity, up to that of some former Charlottetown County exhibitions. There was, however, a very creditable display.

Fruit made a good showing, as also did aipiary products.

There was a particularly good entry of butter in crocks, prints, and in the granular form. Mr. McDougall, who judged this section, was delighted with the improvement in the quality of butter made in the Charlotte County dairies.

The women's department, both in needlework and in the culinary sections, were, as usual, up to a high standard of perfection. There was also a very attractive display of flowers.

The poultry show was rather small this year. The cattle and horses were hardly up to last year. The cattle were brought in in ordinary field fit. A little improvement along this line would very materially help to make a more attractive show.

There was a fair showing of sheep. The entry in the swine classes was not up to that of last year. Mr. Thos. McDonald, who showed such a well-fitted pair last year, was on hand again this year with another good pair. His were really the only pair of hogs deserving of the title exhibition hogs at the fair.

SUBSTITUTIN PEPSIN FOR RENNET

Since the outbreak of the war the Dominion dairy branch has been urging the cheese makers of Canada to secure raw rennets from farmers and butchers in their own localities, as was the practice in the early days of the cheese making industry. This course seemed advisable for the reason that the supply of such material has been secured chiefly in recent years from those central European countries with whom we are now at war.

Only a limited quantity of rennets (calves' stomachs) have been secured, and the cheese factories are now faced with a possible shortage, and exceedingly high prices for rennet extract in any case.

Pepsin

It has been known for some time that pepsin, in its various forms, has the property of coagulating milk, as rennet does, but its cost compared with the normal cost of rennet extract having been prohibitive it has not been used for experimental purposes.

The recent excessive advance in the price of rennet extract alters the situation, and the use of pepsin would now be a commercial advantage in point of cost.

Tests at Finch Dairy Station

To help meet the situation tests have been conducted at the Finch Dairy Station with a view of determining if pepsin may be safely used as a temporary substitute or partial substitute for rennet.

A number of cheese were made by Mr. George Barr and F. J. Singleton, using pepsin as a coagulant. These were examined on June 7 by the experts of the Dairy Division, Prof. Dean, Frank Herns, G. G. Publow, L. A. Zufelt, E. Bourbeau, Geo. Hodge, and others. In each test there were two cheese made, one of which was "set" with rennet and the other with pepsin. In every case but one the judges awarded first place to the cheese made with rennet, but the difference was very slight and chiefly in the matter of texture, which was a little smoother in the cheese made with rennet.

It was the unanimous opinion, however, that it would be safe to recommend the use of pepsin in cases where no rennet can be obtained, or to eke out a limited supply, by using a mixture of rennet and pepsin. Prof. Dean reported that tests made at Guelph in which a mixture of rennet and pepsin was used gave rather better results than pepsin alone. This practice is recommended where it is possible.

In the light of the foregoing results the option on a quantity of pepsin, which was secured by direction of the Minister of Agriculture some time ago, was at once taken up, and it is expecte dthat this supply will be available in the course of a few days for distribution to cheese factories that submit reasonable proof of being actually short of rennet and unable to secure a further supply. Distribution will be made only in lots of 1 to 5 pounds at a time. One pound of pepsin is equal to a little more than one gallon of standard rennet extract.

Application for pepsin must be made on cmfwypaoincmfwypaoincm comb b

Directions for Using Pepsin

Two drachms of soluble powdered pepsin (1 to 3,000 test) are sufficient to coagulate 1,000 pounds of milk. If a suitable scale is available the required quantity may be weighed, but for convenience and to save the ex-

pense of a scale we have devised a measure which holds two drachms when level full, to distribute with the pepsin.

To Dissolve the Pepsin

Dissolve the pepsin in water in the proportion of three ounces of water for each two drachms, or measure, of pepsin, using preferably a round-bottomed cup or bowl as a container. The water must be at a temperature of 105 degrees F. When the water is added it must be stirred immediately and continuously or it will become a sticky mass very difficult to dissolve. After being thoroughly stirred it is well to pour the liquid from one vessel to another to see that there is no undissolved pepsin adhering to the vessel.

It is a good plan to add at first only enough of the water to make a creamy paste. Stir until smooth, and then add the full amount of water. A few drops of hydrochloric acid added to the water helps to dissolve the pepsin.

To Use

Dilute the above in the same quantity of water as is used with rennet extract before adding it to the milk.

It is advisable to dissolve the pepsin at least half an hour before using.

The acidity and temperature of the milk should be the same as when rennet extract is used.

If rennet extract is available it is recommended to use half the usual quantity with half the above quantity of pepsin, mixing the pepsin solution with the rennet extract before diluting with water.

WATERY FOOD AND PRODUCTION OF MILK

According to experiments, it has been found the increased consumption of foods containing a large quantity of moisture has no effect on the milk yield, and the average composition of the milk produced fro mwatery food did not differ from that produced from dry food. No support was obtained for the contention that watery foods give a poorer milk than dry foods. The increased consumption of water when watery foods were being used caused no change in the milk, and did not influence the yield. Variations were found to exist as regards individual foods—e. g., maize pulp, roots, and lucerne increased the yield, potatoes decreased it somewhat, while pumpkins caused a large decrease.

PROF. BLACK VISITS THE MARITIME PROVINCES

Prof. W. J. Black, successor to the late Dr. C. C. James as commissioner in charge of the fund for agricultural education, is now touring the Maritime Provinces. He spent several days at the Halifax Exhibition; from there he went to Fredericton to confer with the heads of the agricultural departments of New Brunswick. He then visited Sussex and went on to Charlottetown. Prof. Black was a classmate of Prof. Cumings in the O. A. C., Guelph, and for a number of years occupied a prominent place on the staff of the Farmers' Advocate before he assumed the direction of the Monitoba Agricultural College. Prof. Black is closely in touch with agricultural matters in Canada from Montreal to the Pacific coast, and is now getting in touch with the men who are doing things in the east. We wish Prof. Black every success.

HAZARDS IN HANDLING GASOLINE

In connection with investigation regarding safety and efficiency in the use of petroleum and its products, the United States Bureau of Mines has made numerous tests of gasoline. In Technical Paper No. 127, by G. A. Burrell, are stated the hazards that may result from handling these liquids and the precautions to be observed.

Gasoline vapor mingles with the air in the same manner that water vapor does, the amount carried depending upon the temperature of the air and the readiness with which the vapor can be obtained. If one takes the cover off a full pail of tightly enclosed gasoline and applies a match to the surface the gasoline will flare up and burn as long as the gasoline lasts. On the other hand, if one puts a few drops of gasoline in a small, tightly enclosed pail, waits a few minutes, and then produces a flame or electric spark a violent explosion will likely result.

In the first case the vapor burns as fast as it comes from the gasoline and mixes with the oxygen of the air, whereas in the second case the oil vaporizes in the pail and mixes uniformly with the air to form an explosive mixture and upon ignition explodes.

On gallon of gasoline when entirely vaporized produces about 32 cubic feet of vapor. If a lighted match could be applied to pure gasoline vapor in the absence of air, no fire or explosion would result. At ordinary temperature air will hold from 5 to 28 per cent of gasoline vapor, depending upon the grade of gasoline. In 100 parts by volume of air and gasoline an explosion would not take place if there were more than 6 parts of gasoline, or less than 1.4 parts. In other words, the explosive range is between 1.4 and 6 per cent of vapor. One gallon of gasoline can, under ideal conditions, render 2,100 cubic feet of an explosive mixture.—H. J. Wilson, Colorado Agricultural College.

FLAVOR IN FOODS

If food is unpalatable, no matter how suitable it is in other respects, it is badly digested. The greater the relish with which an animal eats its food the greater is the amount of the digestive juices secreted. The palatableness of foods is largely dependent upon the odors or flavors they possess, and these are due to chemical bodies, which, though they do not come into any of the categories mentioned, are nevertheless essential constituents of normal food.

Big Dinners

The bigger the family the greater the need for this new Coal Range with the Handy-height oven. There is an almost unbelievable number of trips to the oven while a big dinner is under way. That is what makes the work so tiring. Constant stooping does *so* weary the back.

And here, to lighten that work is the Lighter Day—the Coal Range with a Handy-height Oven.

A big capacity oven with a Clearview door of glass. You lift the dishes in and out of this oven without bending your back. You watch things baking without opening the door—and without stooping. The thermometer is at standing height too. Everything is contrived to take the last ache out of baking.

And for big dinners! The number of things that can be cooked quickly and kept hot on the Lighter Day Coal Range *would* astound you.

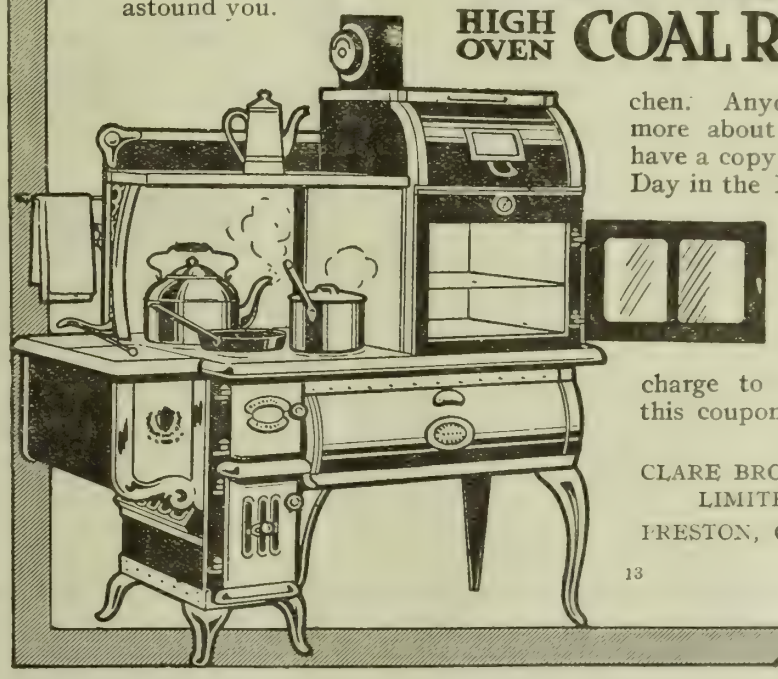
There must be three times the usual warming space. The warming closet over the oven is heated like an auxilliary oven. Below the oven is a large storage closet often used for stowing away pots and pans. This is a famous warming closet when there is a big crowd to cook for. Besides this unusual warming space there is a shelf over the cooking top where plates and dishes may be warmed and kept in readiness for serving.

There are six pot-holes. Four of these are placed in the wide cooking top. Two are fully enclosed to shut in odors of cooking. There need never be an odor of cooking vegetables in the house.

And when dinner is over there is an abundant supply of water on hand to wash up. The reservoir is very large and is kept at boiling heat.

LIGHTER DAY HIGH OVEN COAL RANGE

Where there are many mouths to feed there should be a Lighter Day in the Kitchen. Anyone who would like to know more about this wonderful range should have a copy of our booklet "A Lighter Day in the Kitchen." This is a book made from photos of a housewife actually using the Lighter Day Range. A copy will be sent without charge to anyone using this coupon.



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Salvation Army Captain.

Capt. Wm. E. Sanford (Salvation Army), 38 Earlscourt Ave., Toronto, Ont., writes: "A short time ago I suffered from heart trouble, which seemed to come on me very suddenly. I was so bad, that at times it seemed as if it was all I could do to breathe. I noticed an announcement of Milburn's Heart and Nerve Pills, and decided to give them a trial. After taking two or three days' treatment I felt fine, and my heart has not bothered me since. If this testimony would be of any service to others you are at liberty to use it."

To all who suffer from any form of heart trouble Milburn's Heart and Nerve Pills will give prompt and permanent relief. They strengthen and invigorate the action of the heart, and tone up the whole system.

Milburn's Heart and Nerve Pills are 50 cents per box, or 3 boxes for $1.25. For sale at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

CAVALRY HORSES

"Soldiers who have the management of war horses know how needful it is for them to be gentle and obedient, for a vicious or timid horse might cause no end of trouble in a battle; and this is so thoroughly understood nowadays in training army horses that only kindness is allowed to be used," says Mrs. Florence H. Suckling, in her lecture on "The Horse." "It is rare, indeed, to hear of a vicious trooper, while a soldier who is found beating or bullying his horse is very likely to be summarily reprimanded. This more reasonable and humane management is a saving to the country, as the horses last longer and there are fewer accidents. As soon as a horse is restive inquiries are made into the character of it rider, on the principle of the old maxim: 'Tell me the temper of a trooper's horse and I will tell you the character of the soldier.'"

PRODUCING VEAL

"Will you please tell me how to make the best veals out of Holstein calves? How old should they be to market?"—E. J. M.

To produce the highest grade of veal whole milk comprises the sole feed, and the calves are permitted to suckle their dams. The animals are pushed as rapidly as possible in order to produce a good finish before the flesh begins to toughen. This usually takes from eight to twelve weeks. In a noted veal center of Scotland the younger calves draw the first milk from the cows while the finishing veals get the richer and fatter milk which remains. It is possible to produce veal by using a limited amount of whole milk and substituting grains, etc., but the American market does not make such a course profitable. In matter of fact, only a special and certain market will make it advisable to produce veal by any method.

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"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
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—Rev. Wm. Brown.

I was cured of a bad case of earache by
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—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

KEEPING TOOLS SHARP

By sharpening the farm tools himself a farmer can keep them in good serviceable cutting condition, and the special facilities he has for doing the sharpening will soon pay for themselves.

With a broad flat file an old dull rusty scythe can be sharpened in a few minutes by clamping the blade between two boards and drawing the file back and forth over the blade edge. A whetstone may be used to retain the edge on the blade while the scythe is being used. A large file may also be used in sharpening plowshares, discs, knives, etc.

Two grindstones enable a farmer to do better sharpening than where he has but one stone. The grinding or cutting is then done on the stone having a coarse grit, while the sharp edge is put on the blade or tool by using the finer grit stone.

Where the farm is of considerable size, or a farmer has sweep power or engine power he can use emery wheels to better advantage for grinding and sharpening tools than can be obtained by using grindstones or files. By belting or gearing the emery-wheel shaft —which is journaled in an iron base or frame—to the engine pulley or the sweep gear, and having a number of emery wheels of different fineness, a farmer is in a position to sharpen plow shares, discs, scythes, and blades in double-quick time. The inconvenience and delay occasioned by hauling plowshares and discs to town for the smith to sharpen is no small item, especially where the discs are needed at once.

Almost as important as doing the sharpening is the matter of having duplicate blades. The plow may strike a stone and break the share at a time when it is most needed; a scythe blade may snap in mowing tall weeds, so that it can be used only as a cornstalk cutter. A new share or blade will be needed some time, and an extra one on the farm overcomes any delay, or enables two men to work when an extra hand is hired.

Look well to the quality of blades if you wish them to stand much sharpening or withstand breaking under reasonable conditions. Good steel blades are tempered in oil, and of course cost a little more than those not properly tempered or those made from second-grade material. You can buy a jackknife for a shilling or for ten shillings, and you know the difference!

Do not sharpen tools with undue haste, especially on an emery wheel, as they may become overheated. Extreme heat withdraws the temper. Before the blade becomes hot from the friction of sharpening, allow it to stand a minute, then continue sharpening. Dipping the tool in cold water frequently will prevent burning.—Farm Journal.

Defies the Frost King

King Winter is armed with countless millions of ice-hard snow-crystals, driven by the full force of winter winds; his destructive work is aided by rapid changes in temperature, which freeze tiny particles of water in the pores of unprotected woodwork, tearing the wood fibres apart as freezing water splits a wrought-iron pipe. In the course of a long Canadian winter he can cause irreparable damage to an unprotected silo, barn or home. He attacks in vain, however, the building protected with

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HOW MUCH WOOL DID YOUR SHEEP CLIP?

It is many a year since it made so much difference as to just how much wool one can get from a sheep's back as right now. The war, together with certain other conditions in the world's wool market, have sent wool prices sky rocketing, and so an added interest attaches to reliable data regarding wool production.

How much wool, in pounds and ounces, will a good farm sheep produce in a year? Ask your neighbors who do not keep sheep, and see how many of them can tell you with an assurance that they are right alongside the mark.

Well, here it is: The Manitoba Agricultural College has a flock composed of three breeds—Oxfords, Shropshires, and Leicesters—all well known and popular farm breeds in the western provinces. There are 49 sheep in the flock, almost all of them pure bred, although that does not necessarily affect the weight of fleece, for a good grade flock might be made to yield as much wool, though perhaps not so uniform in quality or in weight per sheep. The shearing this year, owing to the coolness of the weather during late May and early June, was delayed until about two weeks later than usual, being done on June 8th, 9th, and 10th.

The total weight of wool from 49 sheep was 479 lbs., or an average of 9.77 lbs. per fleece. The three breeds averaged fairly close to same weight per fleece, the Oxfords producing the largest weight per fleece and Shropshires the smallest. An interesting fact is that in all the breeds the shearlings gave heavier fleeces than the mature sheep. Here are the results more in detail:

Oxfords—10 mature pure bred Oxford ewes gave 9.5 lbs. each; 5 shearings averaged 10.3 lbs. each; 1 ram, 16 lbs.; 1 grade Oxford, 11 lbs. Average of Oxford flock, 10.3 lbs. each.

Leicesters—9 mature ewes, 8 lbs. each; 5 shearlings, 10.2 lbs.; 1 ram, 12 lbs. Average of flock, 9.66 lbs.

Shropshires—14 mature ewes, 8.92 lbs. each; 2 shearlings, 9 lbs.; 1 ram, 16 lbs. Average for flock, 9.35 lbs.

An interesting fact in connection with the Leicester flock is that one of the best records among the mature sheep was made by an ewe nine years of age. This is an age to which it is not usually deemed profitable to keep sheep.

PREPARATION OF NOURISHMENT FOR STOCK

The food supplied to animals is digested more or less completely according to the condition in which it is given. The food should, therefore, be supplied in such a form that the great-

er proportion can be assimilated, and for this reason a rational preparation of the food is advisable, both to make it more easily digestible and also to excite the appetite of the animals.

If roots are too big they should be cut up, straw should be chaffed, hard grains should be crushed or soaked, especially if given to old animals whose teeth have lost part of their grinding power.

Foodstuffs of poor quality should be mixed with others of a rich character, and foods having little flavor with others more palatable. For example, if straw it supplied by itself, cattle can digest only one-fourth of the nourishment in it, but if associated with good roots a far larger proportion can be absorbed by the digestive system.

Potatoes should, as a rule, be cooked, as then the saliva can act on them more effectively. It has been found that pigs can digest a third more of the tubers when cooked.

And the daily rations should be varied as far as practicable, not certainly, but in gradations.

NEW BULLETIN ON THE SOW THISTLE

What is the worst weed in Canada today? Opinions of farmers might varv a little between wild oats, Canada thistle, and perennial sow thistle, but it is pretty safe to say that at least 75 per cent of the hands would go up at the words "sow thistle."

The sow thistle is fairly true to name, or at least there is a good deal of the hog nature about it, for when permitted to do so it will crowd out and rob almost everything else that tries to be neighbor to it, even to the Canada thistle, wild oats, or other weeds.

T. J. Harrison, field husbandry professor at Manitoba Agricultural College, has written the most exhaustive bulletin on the "Control of the Sow Thistle" that has yet been put into print in Canada, or possibly in any country. This bulletin is well illustrated, not only with photographs of the weed, but also with pictures showing the agencies by which it is spread, implements to be employed in eradicative tillage, and crops that should be grown on infested lands.

The author deals in detail with the best method of fighting the pest in districts where it is just making its first appearance, and also in those parts of the country where it is as thick as the proverbial "hair on a dog's back."

GETTING OUT WILLOW STUMPS

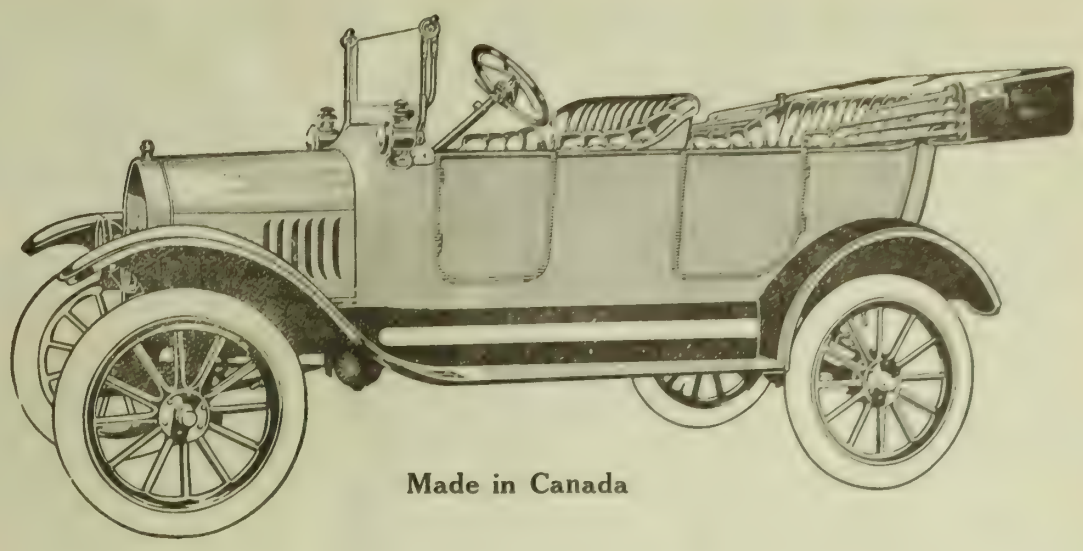
Willow stumps are mean things to dispose of, as any man who has tried it will testify. To blast them out costs considerable money because of the comparatively large charges of dynamite required.

I want to tell your readers how I "fix" large willow stumps. After the tree is cut down I bore an auger hole into the stump just above the surface of the ground, slanting it a trifle downward. I bore just past the heart. I load from a quarter to a half pound of dynamite into the hole, tamp it in tightly with moist clay, and light the fuse.

This splits it and opens it up so that it is in an ideal condition to dry out. A year later I pour a little kerosene oil over it, and it burns out completely.

The dynamite used in this way, you might say, costs nothing, because to attempt to burn out the stumps without first splitting them up takes more than as much more oil as the dynamite costs, and a great deal more of a man's time is required to attend the fires and keep them going.

I hope this pointer may come in handy to some of our farmer friends having willows to dispose of.—M. C. Potter, Bellevue, Iowa.



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EFFECTS OF RUST

It is a proven fact that machinery, where exposed to moisture, rusts out very rapidly. In fact, rust does more damage to the exposed machinery than the work which the implement is called upon to do.

This is a needless waste, however, because rust can practically be overcome by taking the proper care of the machine when not in use.

Farmers could get more than twice as much wear out of most implements if they were housed properly. This alone will not suffice in some climates. A very good way to keep the rust from attacking iron parts exposed to moisture is to coat all the iron with a very cheap oil. This oil should be thick and heavy so that when applied to the iron it will not run off.

This coting of oil will keep all of the moisture away from the iron, and therefore will prevent rust from starting.—W. E. Edmondson, Colorado Agricultural College.

COUCH GRASS

Where the patches are small, hand digging or smothering either with tar paper or with straw or manure is recommended. When fields are badly infested some authorities recommend seeding the field to grass for three or four years, as the roots of the grass tend to work toward the surface and are then more easily pulled out by the harrow. Just as soon as the hay is cut the fied shoud be plowed about four inches deep, then disced and gone over from then on until cold weather sets in with a spring tooth harrow. The spring tooth harrow will do better work than any other implement in bringing the roots to the surface. Next season, if corn or roots be planted and given thorough cultivation all summer, the weeds will be practically all killed. All the plants should be destroyed along the fences; if not, the roots will soon get a hold in the cultivated land.

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Cann Bros., Yarmouth, N. S.
F. W Foster, Kingston, N. S.
Edward Young, Silver Falls, N. B.

Guernsey Cattle.

T. D. Blaikie, Great Village, N. S.
Barry P. Hill & A. N. Faulkuer Great Village, N.S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

Jos. R. Taylor, Upper Dorcheste , N. B.
James McKenny, Summerhill, Queens Co., N.B.
F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Oattle

R. J. Messenger, Lawrencetown, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
Hon. W. Owens, 4026 Dorchester St., Montreal.
J. Frank Roach, Sussex.
Fred. S. Black, Amherst, N. S.

Shorthorn Cattle.

W. E. B. Tait, Dorchester, N. B.
Walter E. Eaton, Upper Canard, N. S.
Joseph E. Kinsman, Upper Canard, Kings Co N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Oxford Down.

Fred S. Black, Amherst, N. S.

Cheviot Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Southdown Sheep

E. W. Heurtley, P. O. Sutherland's River, N. S.

Shropshires

C A. Archibald, Truro, N. S.

Yorkshires.

R J. Messenger, Lawrencetown, N. S.
Hon. W. Owens, 4026 Dorchester St., Montreal.
Sydney J. Goodliffe, Sussex, N. B.

Chester Whites.

Howard W. Corning, Coeggogin, Yarmouth Co. N. S.
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Pure bred shorthorn bulls all ages, several of excellent milking strain. Also hay in carload lots.

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Buff Wyandotte Cock and Hen, nice ones, $3.00 per pair.
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Also choice lot of White Leghorn Cockerels, $1.00 each, if taken at once.
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Senator Dunlap, Sample, Warfield, Wm. Belt, Arnout, Valeria, Desdemona, Ophelia, Portia, Glen Mary, Buster, Haverland, Kellogg's Prize, Paul Jones, Progressive, Superb.

Our new Catalogue and Price List will be ready about the first of the year, and will be sent free to all our old friends and any new ones that are interested in berry growing. The new fall bearer, Progressive, is a great addition to the strawberry world. Be sure and include them in your order for 1917.

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We have for sale five pure bred Bulls, ages from 12 to 18 months Also some Heifers from one to three years old. Write us for particulars.

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A fine Jersey Bull, well grown, of excellent breeding, will be sold very reasonable. 15 months old.

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To avoid inbreeding we wish to sell our Clydesdale Stallion, Baron Majestic No. 10728, champion at the Maritime Horse Show in 1911 as a three year old. Baron Majestic is by Baron Primrose and he by Baron's Pride. Baron Majestic is now 8 years old, dark bay with white points, perfectly sound, a free trappy walker, gentle worker and a prepotent, sure foal getter. For further particulars write

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Calendar on Application.

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Would you like to get a good foundation? Holsteins of this calibre are seldom offered at any price, but we are overstocked and will offer::—

2 Daughters of "Ruby Nig" whose 7 day record is 567 lbs. milk, 25.60 lbs. butter; yearly record, 16,555 lbs. milk, 750 lbs. butter; the second highest record in Canada at 3 years of age.

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And several others of equal breeding, sired by or bred to "Ida Rooker 2nds Vale," a sperior animal in every way and a proven producer of rich milkers. Also some extra nice bulls of the above breeding, all at reasonable prices.

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Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

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Two cho ce young Holstein Bulls, 15 and 16 months old, sired by Dutchland Pietertje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad "the world's greatest bull" 101 A. R. O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

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Vol. 22. SUSSEX N. B., SEPTEMBER 26, 1916 No. 24

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IN Nova Scotia a campaign of misrepresentation has been conducted against us. Our competitors have stated that Canadian Independent Telephones have not given satisfactory service.

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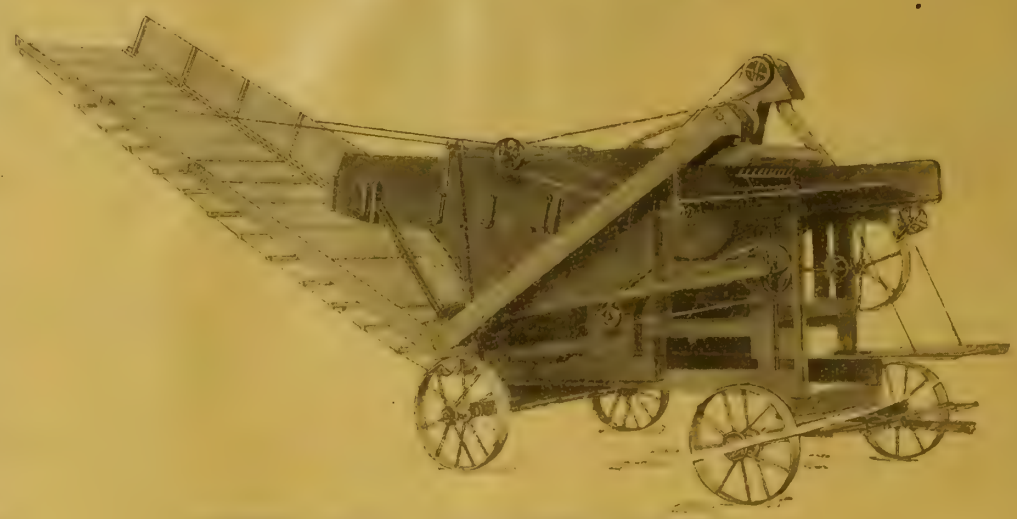

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The most of the graduates will farm, and there is room for all. There is also a large and remunerative opening for well-trained men in professional lines.

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Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

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Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

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For Sale—Registered stock. Male or female.

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Guernsey and Ayrshire Bulls ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

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Shubenacadie, N. B. - Bloomfield Farm

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Owing to having a large milk contract to fill, I find it necessary to dispose of young stock and offer: One Bull Calf, dropped Dec. 10th, dam qualified in the R. O. P. test as a two-year-old, with 8,880 lbs. milk and 363 lbs. butter fat, also Heifer Calves from dams now under test. All sired by Spring Bank Roger, his dam having qualified in R. O. P. with 11,365 lbs. milk, 511 lbs. butter fat, as a four-year-old.

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Holstein Cattle, Yorkshire and White Chester Swine.

Write us for prices, and breeding of bulls ready for service. Have some nice boars for sale, also Sows ready to breed. The right type and prices right.

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Barred Rocks Pullet Mating Strain.
Yard 1—Headed by Hector, imported from Grove Hill, mated to him are 1, 2, 3 pullet, 3rd hen at Amherst Winter Show, 1, 2 pullet, 2, 3 hen at Kentville.

Barred Rock Cockerel Mating Strain.
Yard 2—Headed by Bradley II, 1st cockerel at Amherst, mated to him are three daughters of Bradley I and three pullets in 1st Kentville pen.

White Wyandottes.
Yard 3—Headed by White Bird, 1st Amherst cockerel, mated to 1, 3, 4, 5 hen and 3rd Amherst pen and 1st Kentville pullet.

Blue Orpingtons
Yard 4—Headed by Blue Boy, 2nd Amherst cock, mated to 2, 3 hen and three hens in 2nd Kentville pen.

Single Comb R. I. Reds.
Yard 5—Headed by Kentville Boy, 1st Amherst cockerel and 1st at Halifax, Yarmouth, Kentville, mated to 1st Kentville pen hens, 1st pullet and 1st hen Amherst, 1914.

Our Rocks won Silver Cup for best display in open class, 1916.

Eggs from these pens $2.00 per 13.

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WALTER PAYNE,
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"Homestead Farm"

Holstein-Friesian Cattle
Clydesdale Horses
Shropshire Sheep
Berkshire Pigs

Our present offering is three bulls, fit for service. They are all good individuals and have good official backing. Can part with a few heifers ready to freshen next fall; also some bull calves. Our Berkshires are about all sold and we are now booking orders for ram lambs for fall delivery. Write for description and prices.

Long Distance 'Phone.

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I offer for immediate sale, the Gurnsey Bull Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

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For further particulars write

R. L. HICKS
Dalhousie Jct., - N. B.

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Present offering several choice Cows and Heifers, all ages, and Bulls ranging from 6 to 17 months, sired by our imported prize winner, Grange Kelly, and out of some of the best cows we ever owned. We have also two choice Bulls, about 15 months old, sired by Springbrook White King. We can also sell some nice grade Ayrshire Cows, fresh or about to freshen.

Write us your needs in the Ayrshire line—we have started many young breeders on the right track and have replenished the herds of some of the older breeders. We can supply your wants.

See our herd at the Halifax Exhibition or better still come to see our herd in home quarters. Interested parties always welcome.

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I have changed my place of residence from Amherst to Oxford Jct. N. S. and am better prepared than ever, to supply those wishing Buff Orpingtons stock or eggs, the ideal table fowl and winter layers. Our winnings at the Maritime Winter Fair against strong Competion were as follows 1st cock 1st hen 1st cockerel 1st 3rd pullet, 2nd utility Cockerels 1st & 2nd utility pullets and 1st pen.

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PEN NO. 1 Headed by "General Joffer" 1st cockerel at Halifax, F'ton, and Amherst mated with the 1st pen at the same shows, with 5 others of equal merit. Eggs $3.00 per 15

PEN NO. 2 Headed by "Kitchener" 1st Cock at Halifax, F'ton, and Amherst mated to the 1st 2nd Pullets with six others just as good. Eggs $2.00 per 15.

PEN NO. 3 Headed by "Prince" never shown, but an exceptionly fine utility bird good eve, color right through with lots of size mated with the 1st & 2nd pairs of utility pullets at Amherst 1915 with others that will produce stock that will fill your egg basket next winter Eggs $1.50 per 15

All infertle eggs replaced free of charge

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PRESENT OFFERING:

Ayrshire Cattle Three bulls fit for service and a number of younger ones. Females, from young calves to mature, newly calved cows.

Chester White Swine 3 Brood Sows due to farrow in September, 6 young sows 2 months old. Boar one year old. All registered stock. Persons interested in the purchase of young pigs will find it a money saving proposition to write me for prices.

J. FRANK ROACH, - - - Sussex, N. B.
'PHONE 111.

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Shorthorn Cattle and Shropshire Sheep

Don't forget while looking at the winners, that there are plenty of the [illegible] They are not staying home from choice. Let us quote you prices on stuff [illegible] and showing. Shorthorn cattle, Shropshire sheep and several heavy horses for [illegible]

C. A. ARCHIBALD, - Clifton, N. S.

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Present Offering—One Bull Calf, five months old, grandson of Schuling Sir Posch, and two good Yorkshire Boars, ten months old. Am booking orders for Young Pigs for Spring delivery.

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ATTENTION.—We can supply anything you want in Holsteins, young Bulls from 1 to 15 months old, Cows and Heifers, fresh or to freshen soon, yearling Heifers or Heifer Calves. We intend showing at the Amherst Winter Fair and will be pleased to meet our old customers and anyone interested in Holsteins there. Write your wants to

S. DICKIE & SON, - Central Onslow, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

Prssent offering: A Bull Calf from a dam with official record of 20.64 lbs. Butter in 7 days as a 2-year-old; also Heifer Calf whose dam and granddam average 25 lbs. Butter in 7 days—grand-dam is "Daisy Posch," who holds fourth best 30-day Canadian record as a four-year-old. Other choice stock for sale. Write for prices.

J. H. STOCKTON, BULL'S CREEK FARM, —WOODSTOCK. N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

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I have sold all my Bulls but one. He is 10 months old and an extra fine individual—is well built and growthy and now weighs 650 lbs. Is mostly white with few dark brown spots. His dam made in R. O. P. test as 3 years old 7492 lbs. milk and 306 lbs. butter fat. Also in R. O. P. test as 4 years old made 8917 lbs. milk and 356 lbs. butter fat. His sire's dam made 1318 lbs. milk and 530 lbs. butter fat in R. O. P. test in 12 mos. and in 15 mos. made 15159 lbs. milk. This bull is sure to make a good show animal, is in fine condition and has just passed the Tuberclin test O. K

For further particulars apply to

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The place to get GOOD GOODS at RIGHT PRICES and a SQUARE DEAL in Poultry Feeds and Supplies of every description is

Maritime Poultry Supply Co.,
MONCTON, N. B.

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Send for FREE Catalogue; with descriptions and prices of over 1000 farms in Nova Scotia.

McCALLUMS LIMITED,
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Truro, - Nova Scotia

Chester White Pigs For Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B

EGGS FOR HATCHING

From Rose and Single Comb R. I. Reds, winners of the Silver Cup three years in succession at Amherst, 1913, 1914 and 1915. One pen of each comb and they are the best I ever owned.

Eggs $2.50 per 15.

W. H. HENRY, Shubenacadie, N. S.

FOR SALE

Two pure bred Clydesdale Stallions, 7 and 2 years old. Shorthorn Bull, 5 years old, imported from Ontario. Write us for full particulars.

MORRIS SCOVIL & SONS,
Meadowlands, Gagetown, N. B.

Guaranteed Eggs from Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER,
33 Jubilee Road, HALIFAX, N. S.

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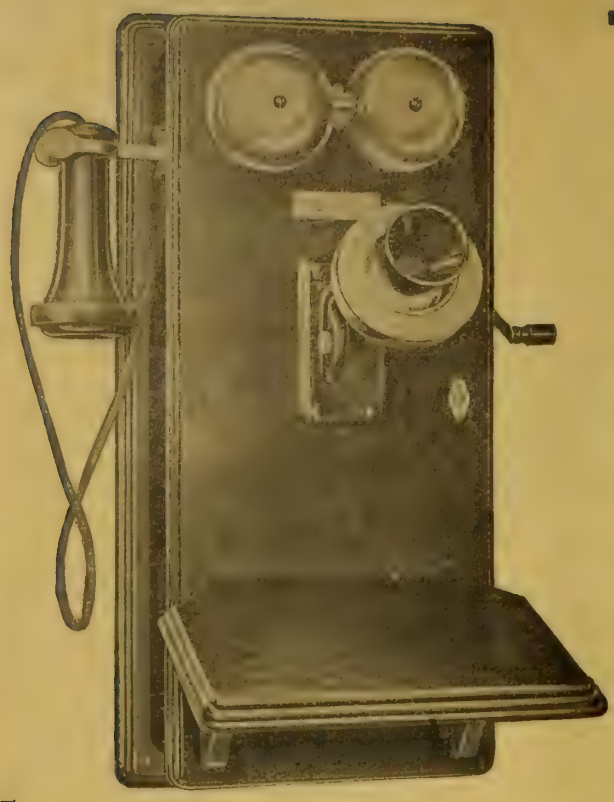
The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast males. Combs and wattles protected by heavy crest and beard. Eggs $1.50 per 15. Cash with order.

W. J. M. MacLEOD, Sussex, N. B.

Now is the Time to Buy Your Breeding Stock

Year old hens best laying strains Twenty Single Comb White Leghorns at [illegible] each, 15 Barred Plymouth Rocks at 90c each, 15 Single Comb Rhode Island Reds at 90c each: May hatched Cockerels while they last at $1.00 each Two pure bred Chester White Boar Pigs, four months old, at $12.00 each. A few choice Holstein Cows, from two years old up.

N. W. EVELEIGH,
"The Orchards" - Sussex, N.B.



Three Out of One Hundred Disagree With Us.

IT is pretty good sense to judge a man by his friends also by those who disagree with him. Judge telephones likewise. Out of every hundred farm telephones in Canada, ninety seven are Northern Electric, three are of some other make. Just the sheer force of numbers seem to prove that the best of all is the renowned

Northern Electric No. "1317"

But take the telephone itself—let us see what is inside of it to learn this overwhelming favor. Check up the comparative merits of transmitter, receiver, battery, generator, ringer and cabinet work. Point by point compare No. 1317 with all others then you will know why three out of every hundred farm telephone users are willing to experiment and suffer possible loss and dissatisfaction.

Large stocks of the No. 1317 telephones are carried at every one of our branch houses. Write to the branch nearest to you and they will be glad to answer every telephone question, fill every telephone order, not only for instruments but for batteries, line construction material, tools. etc. Write them for a copy of our interesting new booklet "How the telephone helps the farmer." Use the coupon today---there is no obligation.

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